

APPENDIX F

BORING LOGS AND AS-BUILT DIAGRAMS FOR A1-1 THROUGH A1-19

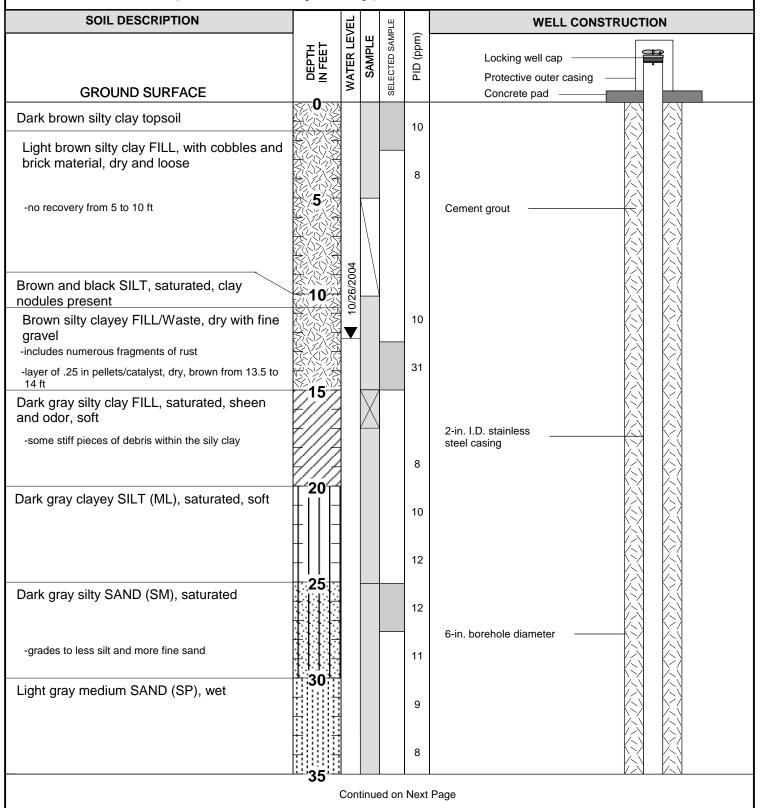
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (w/ 7 inch override casing to 20 ft bgs)

COMPLETION DATE: October 7, 2004
GROUND SURFACE ELEV.: 408.4 ft MSL
TOP OF CASING ELEV.: 410.46 ft MSL

COORDINATES: N 699829.6 ft; E 2295569.9 ft





LOG & AS-BUILT DIAGRAM

A1-1

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 7, 2004 GROUND SURFACE ELEV.: 408.4 ft MSL TOP OF CASING ELEV.: 410.46 ft MSL

COORDINATES: N 699829.6 ft; E 2295569.9 ft

SOIL DESCRIPTION		Ē		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page		×		SELE	ш	Continued from Previous Page
Gray fine SAND (SP), mixed with silt, saturated	35		X		10	
-fine to medium sand	40				9	
	40				11	Cement grout
-medium sand, moist	45				11	2-in. I.D. Stainless Steel casing
	;				9	
	50				8	6-in. borehole diameter
	+				11	
	55				11	
					8	
	60				8	
-no recovery from 60 to 65 ft	+					
-gray, medium to coarse sand, round to sub-rounded wet	± 65 ±		X		10	
	+		,		11	



LOG & AS-BUILT DIAGRAM

A1-1

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

TOP OF CASING ELEV.: 410.46 ft MSL COORDINATES: N 699829.6 ft; E 2295569.9 ft HOLE DIAMETER: 6 inch

COMPLETION DATE: October 7, 2004

GROUND SURFACE ELEV.: 408.4 ft MSL

SOIL DESCRIPTION		VEL		WPLE	ا ج ا	WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page	70			S		Continued from Previous Page
Gray SAND (SP), medium to coarse, round of sub-rounded, wet with occasional cobbles, saturated					9	
-with occasional copples, saturated	+	_			9	
	75				8	
					9	
-medium sand	80				10	Cement grout
	+				10	
-coarse sand, rounded to sub-rounded	<u>+</u> 85 +		X		10	
	90				11	2-in. I.D. stainless
-fine to medium sand from 92 to 93 ft	30				11	steel casing
	0.5				9	6-in. borehole diameter
-occasional cobbles, saturated	95					
-gray coarse sand, wet					9	
	100				11	99.0 ft
-gray, coarse sand, round to sub-round, occasional cobbles, wet	100				11	Bentonite pellet seal
-frequent cobbles from 103 to 106 ft	+				10	Sand backfill, #5

GROUNDWATER SERVICES, INC. **LOG & AS-BUILT DIAGRAM**

A1-1

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

DRILLER: Geral Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

GROUNDWATER

SERVICES, INC.

COMPLETION DATE: October 7, 2004 GROUND SURFACE ELEV.: 408.4 ft MSL TOP OF CASING ELEV.: 410.46 ft MSL

COORDINATES: N 699829.6 ft; E 2295569.9 ft

SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page				SELI		Continued from Previous Page
Gray SAND (SP), coarse, rounded to sub-rounded, with occasional cobbles, wet Limestone bedrock -no recovery	105				12	Sand backfill, #5 2-in. I.D. stainless steel screen, No. 10 slot 6-in. borehole diameter
Total Depth = 113.5 ft	-115 -115 -120 -125 -135 -135 -140					Notes: 1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. 2) Elevations are NAVD 88 in feet. 3) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, this temporary casing was withdrawn during placement of the grout seal.
	LOG &	AS		UIL \1-1		DIAGRAM GSI Job No. G-2876 Page 4 of 4 Issued: 1/21/05

Sauget Area 1 Sauget and Cahokia, Illinois

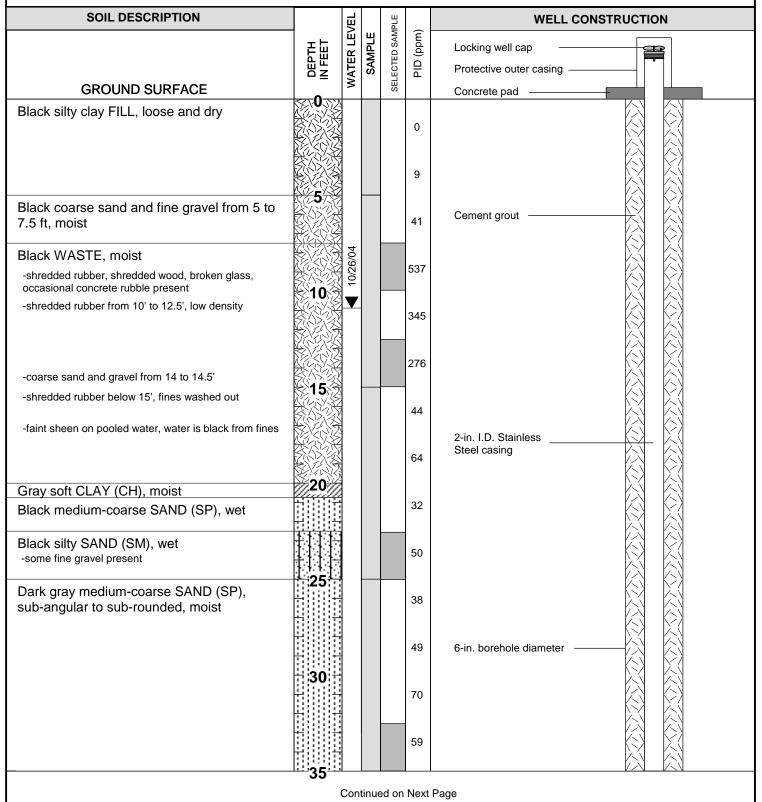
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs

COMPLETION DATE: September 12, 2004
GROUND SURFACE ELEV.: 405.5 ft MSL
TOP OF CASING ELEV. 408.6 ft MSL

COORDINATES: N 700221.4 ft; E 2295355.3 ft





LOG & AS-BUILT DIAGRAM

A1-02

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 12, 2004 GROUND SURFACE ELEV.: 405.5 ft MSL TOP OF CASING ELEV. 408.6 ft MSL

COORDINATES: N 700221.4 ft; E 2295355.3 ft

SOIL DESCRIPTION		Æ		P.E		WELL CONSTRUCTION
Continued from Previous Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	Continued from Previous Page
Continued from Previous Page	:::35:::			S		Continued from Previous Page
Dark gray medium-coarse SAND (SP), mois -subrounded-subangular			X		30	
	40				8	Cement grout
Black sandy SILT (SM), some fine gravel, we Gray fine-medium SAND (SP), moist	11111				27	
	45				18	
-medium-coarse grained from 47 to 60'	50				47	
	+				471	2-in. I.D. Stainless Steel casing
-sand is wet and flowing	55				52	
			\triangle		21	
-subrounded-subangular, saturated	60				233	
-occasional clay nodules present	+++++++++++++++++++++++++++++++++++++++				192	6-in. borehole diameter
-fine gravel and coarse sand from 64.5 to 66'	65					
-fine gray sand from 66 to 67.5', moist					121	
-coarse gray sand below 67.5', moist					114	



LOG & AS-BUILT DIAGRAM A1-02

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 2 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 12, 2004 GROUND SURFACE ELEV.: 405.5 ft MSL TOP OF CASING ELEV. 408.6 ft MSL

COORDINATES: N 700221.4 ft; E 2295355.3 ft

SOIL DESCRIPTION		Æ		J.E		WELL CONSTRUCTION
Continued from Previous Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	Continued from Previous Page
	-:. 70-:-			0)		
Gray, coarse grained SAND (SP), sub-angular, moist	+++++++++++++++++++++++++++++++++++++++				28	
-gray fine gravel-coarse sand, rounded - sub-rounded moist	75				18	
	80				14	Cement grout
-medium sand from 81 to 82.5'					2	
-fine gravel to medium-coarse sand, frequent small cobbles, sub-angular to sub-rounded moist	85				13	2-in. I.D. stainless steel casing
-gray coarse sand, occasional fine gravel, rounded to sub-rounded	90		X		13	6-in. borehole diameter
-fine to medium sand from 92 to 94', wet	+				1	92.5 ft
-coarse sand below 94', occasional cobbles	95				<1	Bentonite pellet seal 95.0 ft
					<1	Sand backfill, #5
-gray coarse sand, rounded to sub-rounded below 95', saturated					<1	2-in. I.D. stainless steel screen, No. 10 slot
	100				<1	
Gray fine GRAVEL (GP), occasional cobbles, no fines present, wet	105				<1	

LOG & AS-BUILT DIAGRAM A1-02

> Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 3 of 4



DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 12, 2004 GROUND SURFACE ELEV.: 405.5 ft MSL TOP OF CASING ELEV. 408.6 ft MSL

COORDINATES: N 700221.4 ft; E 2295355.3 ft

SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION	
	ᆖ	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)		
	DEPTH IN FEET	ATEF	SAM	ECTEI) Olo		
Continued from Previous Page		š		SEL		Continued from Previous Page	
Gray coarse GRAVEL (GP), with small cobbles, wet	105				<1	6-in. borehole diameter	
Limestone bedrock						Sand backfill, #5	
	110					2-in. I.D. stainless steel screen, No. 10 slot	
						Bottom plug 113 ft	
Total Depth = 113 ft	<u> </u>						
	- 115-						
	120						
	<u> </u>						
	<u> </u>						
	<u> </u>						
	−125 −						
	420-						
	130						
	L _						
	<u> </u>	-					
	135						
		-				Notes: 1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. 2) Elevations are NAVD 88 in feet. 3) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, thi temporary casing was withdrawn during placement of the	m is
	100 %	A S		1111		grout seal. GSI Job No. G-2876	



LOG & AS-BUILT DIAGRAM A1-02

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

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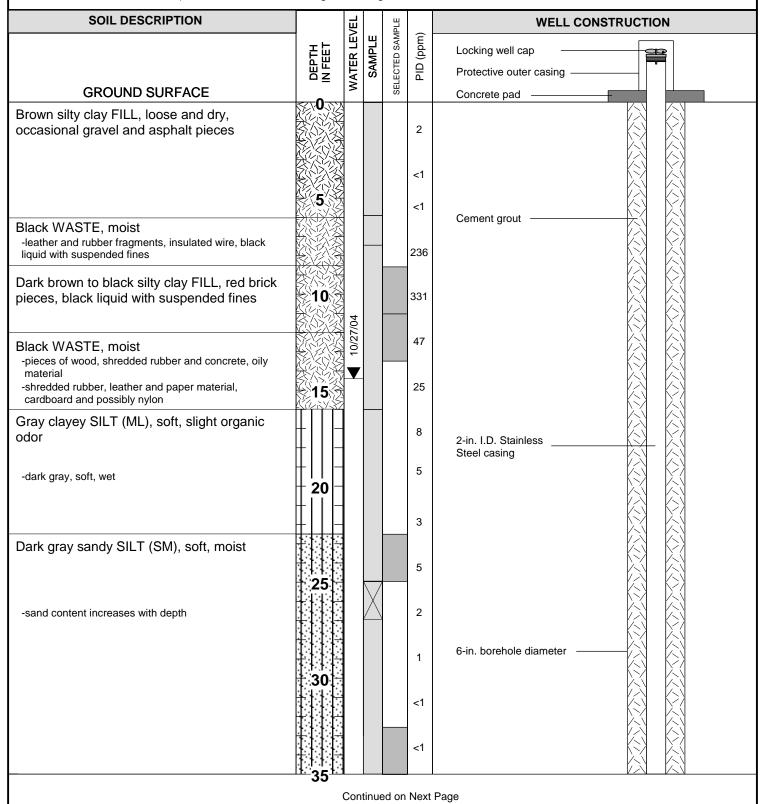
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs

COMPLETION DATE: September 10, 2004
GROUND SURFACE ELEV.: 409.7 ft MSL
TOP OF CASING ELEV.: 412.57 ft MSL

COORDINATES: N 700049.7 ft; E 2295611.1 ft





LOG & AS-BUILT DIAGRAM

A1-03

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 10, 2004 GROUND SURFACE ELEV.: 409.7 ft MSL TOP OF CASING ELEV.: 412.57 ft MSL

COORDINATES: N 700049.7 ft; E 2295611.1 ft

SOIL DESCRIPTION		世		J.E		WELL CONSTRUCTION	
		WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)		
	DEPTH IN FEET	\TEF	SAIN	CTEL) OIc		
Continued from Previous Page		8		SELE		Continued from Previous Page	
ray medium-coarse SAND (SP), moist	35						
					<1		
-angular - sub-angular							
-clay nodules present from 35 to 36'					<1		
-medium - fine below 40'	40 -						
medalii iiile solew te						Cement grout	
	4				<1		
	H						
					1		
	⊹ 45 ÷						
					1		
	H				Ċ		
					2		
	50 ⊤					2 in LD Stainless	
					1	2-in. I.D. Stainless Steel casing	
					1		
	EE				'		
	55						
-medium to coarse sand, some fines, sub-angular - sub-rounded, moist					<1		
Sub-Tourided, Moist							
					<1		
	60						
					1	6-in. borehole diameter	
-clay nodules present from 63 to 65'	#:::::				'	0-III. Boteriole diameter	
-clay flodules present from 63 to 63					<1		
					`		
	- 65 +		\/				
	Till it		X		<1		
-medium- fine sand, small gravel present							
-medium- fine sand, small gravel present, sub-rounded to sub-angular, becoming more					<1		
coarse with depth, wet					< 1		

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-03

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 10, 2004 GROUND SURFACE ELEV.: 409.7 ft MSL TOP OF CASING ELEV.: 412.57 ft MSL

COORDINATES: N 700049.7 ft; E 2295611.1 ft

SOIL DESCRIPTION		핕		J.E		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page	70	>		SE		Continued from Previous Page
aray, medium - coarse grained SAND (SP), noist -fine gravel present, sub-rounded to sub-angular, becoming more coarse with depth -coarse sand from 73 to 75'					<1	
-occasional 3"-4" cobbles, occasional clay nodules -black sand granules present from 75 to 76', no odor	75				<1	
or sheen -medium grain, sub-rounded to sub-angular, occasional black granules of coal or sand, wet	+				<1	
	80				<1	Cement grout
	-				<1	
-black medium sand from 84 to 84.5', no odor, may be naturally occurring coal material -3" piece of coal found -no recovery from 85 to 90'	85				<1	2-in. I.D. stainless steel casing
-gray medium sand, occasional fine gravel, sub-rounded to sub-angular, moist	90				<1	6-in. borehole diameter
	0.5				<1	95.0 ft
-medium coarse, sub-rounded to rounded	93				<1	Bentonite pellet seal
ray coarse sand and fine GRAVEL GP), moist					<1	Sand backfill, #5
ray fine gravel and coarse grained SAND SP), moist, rounded to sub-rounded	100				<1	2-in. I.D. stainless steel screen, No. 10 slot
-medium to fine sand with increasing fines, occasional cobbles 1-2" below 102' depth	+-				<1	



LOG & AS-BUILT DIAGRAM A1-03

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 3 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 10, 2004 GROUND SURFACE ELEV.: 409.7 ft MSL TOP OF CASING ELEV.: 412.57 ft MSL

COORDINATES: N 700049.7 ft; E 2295611.1 ft

SOIL DESCRIPTION		Ē		PLE		WELL CONSTRUCTION	
	│ ≠₩	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)		
	DEPTH IN FEET	TER	SAM	СТЕГ) QI		
Continued from Previous Page		W	0,	SELE	۵	Continued from Previous Page	
poor core recovery due to drilling difficulties.	105				<1		
Recovered material included pulzerized bedrock, sand, nd gravel. Bedrock surface is somewhere within the 05 to 110 ft depth interval.		-				6-in. borehole diameter	
	_		$ \ $		4	Sand backfill, #5	
imestone bedrock	- 110 -		\				
						2-in. I.D. stainless steel screen, No. 10 slot	
	115					Bottom plug 115 ft	
Total Depth = 115 ft							
Total Boput - TTO IX		-					
	400						
	120						
	<u> </u>						
	-125 -						
	<u> </u>						
	-130 -						
	405						
	-135- 					Notes: 1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. 2) Elevations are NAVD 88 in feet. 3) A temporary 7-inch diameter over-ride casing was installed during deliving to isolate the waste materials from the state of the coordinate of the state of th	m
	-140 -	_				the underlying alluvial aquifer. After the well was built, th temporary casing was withdrawn during placement of th grout seal.	iis e



LOG & AS-BUILT DIAGRAM A1-03

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs)

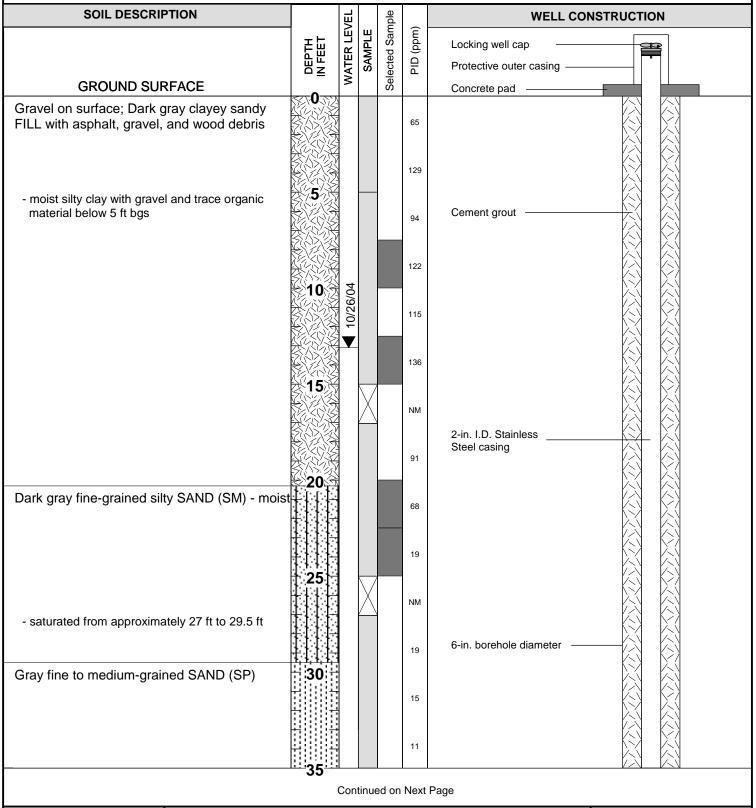
COMPLETION DATE: September 26, 2004 GROUND SURFACE ELEV: 407.8 ft, MSL TOP OF CASING ELEV: 410.87 ft, MSL

WELL COORDINATES: N 699614.9 ft E 2295082.7 ft

GSI Job No. G-2876

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Issued: 1/21/05



LOG & AS-BUILT DIAGRAM

A1-4

Sauget Area 1

Sauget and Cahokia, Illinois

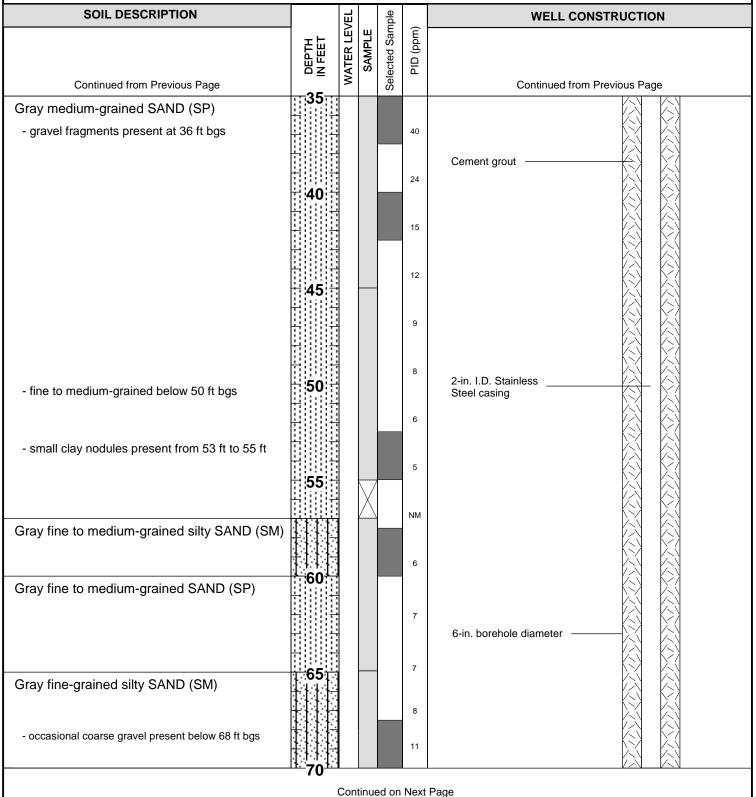


DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 26, 2004 GROUND SURFACE ELEV: 407.8 ft, MSL TOP OF CASING ELEV: 410.87 ft, MSL

WELL COORDINATES: N 699614.9 ft E 2295082.7 ft





LOG & AS-BUILT DIAGRAM

A1-4

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 26, 2004 GROUND SURFACE ELEV: 407.8 ft, MSL TOP OF CASING ELEV: 410.87 ft, MSL

WELL COORDINATES: N 699614.9 ft E 2295082.7 ft

SOIL DESCRIPTION		ا بر		<u>e</u>		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page		>		Sel		Continued from Previous Page
ray medium to coarse-grained SAND (SP)) 70				14	Cement grout
	75		X		8 NM	
	80				6	2-in. I.D. stainless
and bloom records from 22 ft to 25 ft bac	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				15	steel casing
- cobbles present from 83 ft to 85 ft bgs					3	
- coarse-grained below 85 ft bgs	85				8	6-in. borehole diameter
	90				13	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				15	93.5 ft
	95				10	Bentonite pellet seal 97.0 ft
	100				6	Sand backfill, #5
- medium to coarse-grained sand mixed with fine gravel below 100.5 ft bgs	H				10	2-in. I.D. stainless-steel screen, No. 10 slot

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-4

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 26, 2004 GROUND SURFACE ELEV: 407.8 ft, MSL TOP OF CASING ELEV: 410.87 ft, MSL

WELL COORDINATES: N 699614.9 ft E 2295082.7 ft

						LEE GOOKBIN/(120: N 003014:5 K E 2230002:7 K
SOIL DESCRIPTION		Æ		nple		WELL CONSTRUCTION
	ᆂᇤ	Ä	님	Sar	ppm	
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page		1		Sele	п.	Continued from Previous Page
Coarse subrounded GRAVEL (GW) mixed	:-105	1				2-in. I.D. stainless-steel
with gray medium-grained sand		8			12	screen, No. 10 slot
	247474					Sand backfill, #5
	7.07.07.07.07 7.07.07.07.07.07	4			10	
	#110÷					6-in. borehole diameter
Limestone Bedrock						
					NM	

	115 [±]			1		Bottom plug — 115.0 ft
Total Depth = 115.0 ft	<u> </u>					
	420-					
	120					
	−125 −					
	420-					
	130					
	-135 -					
						Notes:
						Location coordinates are Illinois West Zone State Plane (NAD 83) in feet. Elevations are referenced to NAVD 88.
	140					2) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the under ying alluvial aquifer. After the well was built, this temporary
	100 9	Λ 6	L.P	1 111	L P	casing was withdrawn during placement of the grout seal. GSI Job No. G-2876
	LUG &	AC				Page 4 of 4
				Δ1- Δ	L	



A1-4

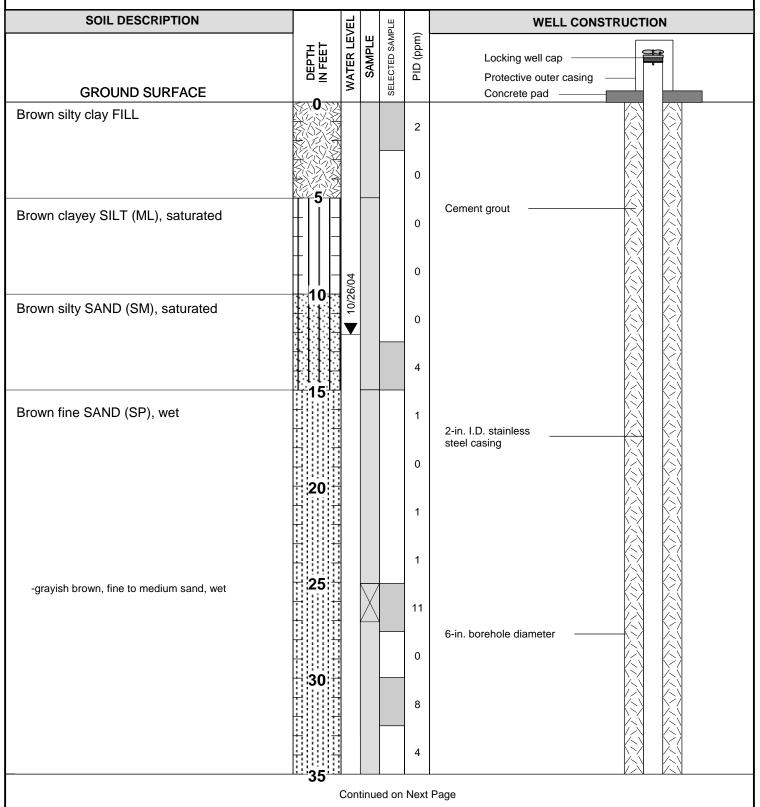
Sauget Area 1 Sauget and Cahokia, Illinois

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 8, 2004 GROUND SURFACE ELEV.: 406.5 ft MSL TOP OF CASING ELEV.: 409.74 ft MSL

COORDINATES: N 699948.4 ft; E 2295067.8 ft





LOG & AS-BUILT DIAGRAM

A1-5

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

TOP OF CASING ELEV.: 409.74 ft MSL COORDINATES: N 699948.4 ft; E 2295067.8 ft

COMPLETION DATE: October 8, 2004 GROUND SURFACE ELEV.: 406.5 ft MSL

HOLE DIAMETER: 6 inch

SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page	:::35:::	_		SE		Continued from Previous Page
Grayish brown medium SAND (SP), round to sub-rounded grains, wet		-			1	
-fine to medium sand from 38 to 40 ft	+	-			0	
-gray medium sand below 40 ft	40				3	Cement grout
	<u> </u>	-			1	2-in. I.D. Stainless
	⊹ 45 ±				2	Steel casing
	 50				1	6-in. borehole diameter
		-			1	
Gray silty CLAY (CL), soft, wet					0	
-layer of wood from 53.5 to 54.5 ft Gray fine to medium SAND (SP), wet	55				o	
	+				0	
-medium sand from 60 to 65 ft	- 60 -				0	
modium cana nom so to so t					0	
-light gray fine to medium sand from 65 to 70 ft	65				0	
5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	- - -		X		1	
	70				0	
	70	Cont	inue	ed on	Next	Page



LOG & AS-BUILT DIAGRAM

A1-5

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 8, 2004 GROUND SURFACE ELEV.: 406.5 ft MSL TOP OF CASING ELEV.: 409.74 ft MSL

COORDINATES: N 699948.4 ft ; E 2295067.8 ft

SOIL DESCRIPTION		F		IPLE		WELL CONSTRUCTION
Continued from Province Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	Continued from Dravious Davis
Continued from Previous Page	70			()		Continued from Previous Page
Light gray medium SAND (SP), wet					0	
-fine grained from 72 to 73 ft	- - 75 -				0	
					1	
-medium to coarse sand below 80 ft	80				1	Cement grout
-occasional cobbles at 82.5 ft	Hilli				0	
-no recovery 82.5 to 85 ft						
	85					3 in LD stainless
-gray medium to coarse sand	- 00				0	2-in. I.D. stainless steel casing
-no recovery 90 to 95 ft	90				0	6-in. borehole diameter
	+					92.5 ft
-gray medium to coarse sand, rounded to sub-rounded	95		_\			Bentonite pellet seal
	+ · · · · +				0	97.0 ft
	-400				0	
-occasional cobbles below 101 ft	100				0	Sand backfill, #5
	+-				0	2-in. I.D. stainless steel screen, No. 10 slot

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-5

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Geral Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

TOP OF CASING ELEV.: 409.74 ft MSL

COMPLETION DATE: October 8, 2004 GROUND SURFACE ELEV.: 406.5 ft MSL

COORDINATES: N 699948.4 ft; E 2295067.8 ft HOLE DIAMETER: 6 inch

SOIL DESCRIPTION		ΛΕΓ		IPLE		WELL CON	ISTRUCTION
Continued from Previous Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	Continued from	Pravinus Paga
	;;105 _{;;}			S		Continued from	rievious rage
Gray medium coarse SAND (SP), rounded to sub-rounded, with occasional cobbles, wet Limestone bedrock					0	Sand backfill, #5 2-in. I.D. stainless steel screen, No. 10 slot	
Limestone bedrock	110					6-in. borehole diameter ———	
	115	1				Bottom plug	115.0 ft
Total Depth = 115.0 ft							
		-				Notes: 1) Location coordinates are II coordinates (NAD 83) in fe 2) Elevations are NAVD 88 in	eet.
<u> </u>						<u> </u>	
	OG &	AS	-B	UIL	T D	IAGRAM	GSI Job No. G-2876



A1-5

Sauget Area 1 Sauget and Cahokia, Illinois

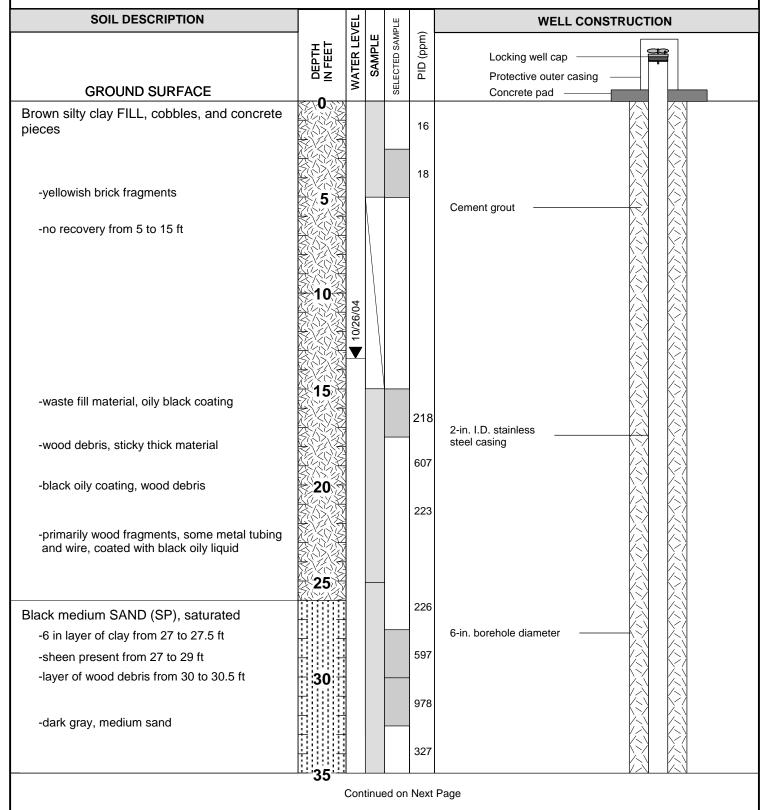
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 24 ft bgs)

COMPLETION DATE: October 6, 2004
GROUND SURFACE ELEV.: 408.9 ft MSL
TOP OF CASING ELEV.: 410.97 ft MSL

COORDINATES: N 700550.4 ft; E 2295404.5 ft





LOG & AS-BUILT DIAGRAM

A1-6

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

COMPLETION DATE: October 6, 2004 GROUND SURFACE ELEV.: 408.9 ft MSL TOP OF CASING ELEV.: 410.97 ft MSL

COORDINATES: N 700550.4 ft; E 2295404.5 ft HOLE DIAMETER: 6 inch

SOIL DESCRIPTION		ÆL		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page	:::35:::	^		SE		Continued from Previous Page
Dark gray medium SAND (SP), saturated			X		154	
-dark gray to black	+-				264	
-gray, medium sand, rounded to sub-rounded	+ 40				117	Cement grout
					87	2-in. I.D. Stainless
	45				70	Steel casing
	- - - 50				79	6-in. borehole diameter
	- -				69	
	÷ 55				57	
					28	
-medium coarse sand, rounded	- - 60				28	
					70	
-occasional cobbles, charcoal pieces	 				52	
-slight sheen from 61 to 63 ft	65		X		51	
-dark gray below 67.5 ft					75	

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-6

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 6, 2004 GROUND SURFACE ELEV.: 408.9 ft MSL TOP OF CASING ELEV.: 410.97 ft MSL

COORDINATES: N 700550.4 ft; E 2295404.5 ft

SOIL DESCRIPTION		ᆸ		FE.		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page	70	>		S		Continued from Previous Page
Dark gray medium to coarse SAND (SP), vet -odor and sheen associated with wood material at 72 ft	- 70				91	
-gray, medium to coarse sand, with fine					26	
gravel and occasional cobbles	75				3	
-silty sand layer with charcoal at 79 ft	80				3	Cement grout
-no recovery from 80 to 85 ft		-	//			
-gray, medium, wet with occasional cobbles	85	_			18	2-in. I.D. stainless steel casing
-no recovery from 90 to 95 ft	90				14	6-in. borehole diameter
-gray medium sand	95					
	+				11	Bentonite pellet seal
	100				6	100.0 ft
-fine gravel and frequent cobbles present,					13	Sand backfill, #5
some brown silt present	+				15	2-in. I.D. stainless steel 103.0 ft screen, No. 10 slot

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-6

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 6, 2004 GROUND SURFACE ELEV.: 408.9 ft MSL TOP OF CASING ELEV.: 410.97 ft MSL

COORDINATES: N 700550.4 ft; E 2295404.5 ft

SOIL DESCRIPTION		ÆL		PLE		WELL CONSTRUCTION
	를 다	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
	DEPTH IN FEET	ATE	SAIV	ECTEI	PID (
Continued from Previous Page		Ά		SEL	_	Continued from Previous Page
Gray medium SAND (SP), mixed with gravel and cobbles	105				13	Sand backfill, #5
Light gray limestone bedrock	110					2-in. I.D. stainless steel screen, No. 10 slot
	115					6-in. borehole diameter
						Bottom plug 118.0 ft
Total Depth = 118 ft	120					
	-	-				
	125					
	 	-				
	- -130-	-				
	 135	-				
	-140					 Notes: Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. Elevations are NAVD 88 in feet. A temporary 7-inch over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, this temporary casing was withdrawn during placement of the grout seal.



LOG & AS-BUILT DIAGRAM

A1-6

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs)

COMPLETION DATE: September 27, 2004 GROUND SURFACE ELEV: 410.9 ft, MSL TOP OF CASING ELEV: 410.59 ft, MSL

WELL COORDINATES: N 700568.5 ft E 2295656.3 ft

SOIL DESCRIPTION		ÆL		eldι		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	Locking well cap
GROUND SURFACE	<u> </u>	_		Š		Concrete pad_
Gray silty clay FILL with gravel and trace organic material					9	
	5				0	Cement grout
	10				0	
		10/26/04			0	
No recovery from 15.0 ft to 16.0 ft bgs. Suspect fill based on inspection of sampling equipment.	15	\		7	NM	2-in. I.D. Stainless
- gray silty clay fill below 18 ft bgs	20				0	Steel casing
					34 14	
Gray silty fine-grained SAND (SM); clayey to 28 ft bgs	25				10	
	- - - - 30				9	6-in. borehole diameter
					14	
	35	Cont	tinue	ed on	9 Next	Page



LOG & AS-BUILT DIAGRAM

A1-7

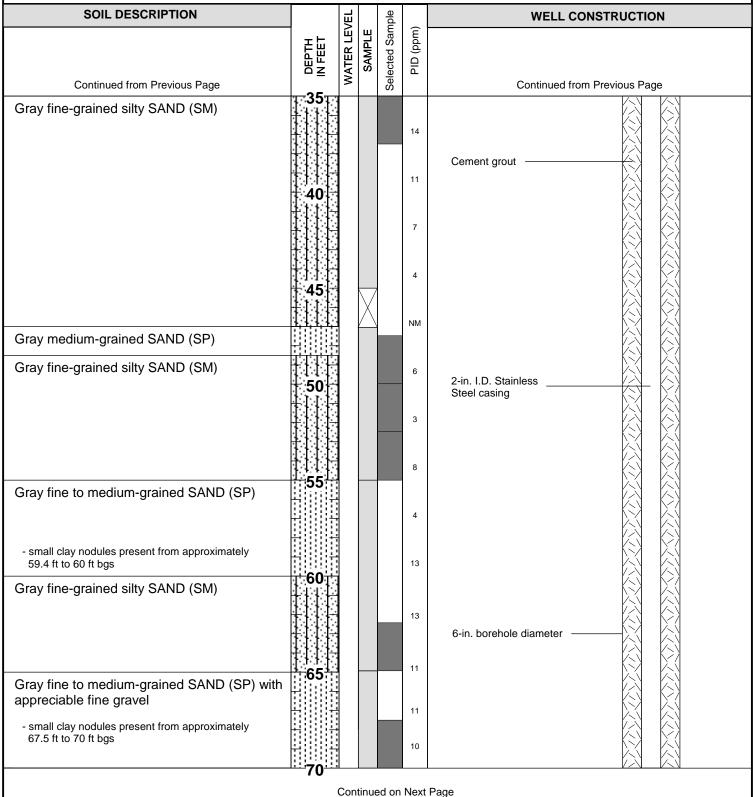
Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 27, 2004 GROUND SURFACE ELEV: 410.9 ft, MSL TOP OF CASING ELEV: 410.59 ft, MSL

WELL COORDINATES: N 700568.5 ft E 2295656.3 ft





LOG & AS-BUILT DIAGRAM

A1-7

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 27, 2004 GROUND SURFACE ELEV: 410.9 ft, MSL TOP OF CASING ELEV: 410.59 ft, MSL

WELL COORDINATES: N 700568.5 ft E 2295656.3 ft

SOIL DESCRIPTION		ΈL		ple		WELL CONSTRUCTION
Continued from Previous Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	Continued from Previous Page
Gray fine to medium-grained SAND (SP) with	70			0)		
appreciable fine gravel No recovery from 71 ft to 75 ft bgs. Suspect gray fine to medium-grained sand based on inspection of sampling equipment.					14 NM	Cement grout
	75		/		17	
	- 80				13	2-in. I.D. stainless
					20	steel casing
	- 85		\bigvee		16	
Gray silty fine-grained SAND (SM)					NM 4	6-in. borehole diameter
	90				13	
	95				8	
Gray medium-grained SAND (SP)					11	96.5 ft
	100				14	Bentonite pellet seal
- medium to coarse-grained below 100.0 ft bgs					15	Sand backfill, #5
	+				10	2-in. I.D. stainless-steel screen, No. 10 slot

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-7

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 27, 2004 GROUND SURFACE ELEV: 410.9 ft, MSL TOP OF CASING ELEV: 410.59 ft, MSL

WELL COORDINATES: N 700568.5 ft E 2295656.3 ft

		ı		1	VV	/ELL COORDINATES: N 700568.5 ft E 2295656.3 ft
SOIL DESCRIPTION		Æ		nple		WELL CONSTRUCTION
	투끈	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
	DEPTH IN FEET	ATE	SAI	ecte	PID	
Continued from Previous Page	105 	≥		Sel		Continued from Previous Page
Fine to coarse rounded to subrounded GRAVEL (GP) mixed with medium-grained sand and cobbles	-103				10	2-in. I.D. stainless-steel screen, No. 10 slot
Limestone Bedrock	-110				8 NM	Sand backfill, #5
	115					6-in. borehole diameter
Total Depth = 118.0 ft						Bottom plug 118.0 ft
Total 2 Spin Trois it						
	125 - - -					
	135					
						Notes: 1) Location coordinates are Illinois West Zone State Plane (NAD 83) in feet. Elevations are referenced to NAVD 88. 2) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, this temporary casing was withdrawn during placement of the grout seal.
	LOG &	AS	-B	UIL	T D	GSI Job No. G-2876
				147	,	Page 4 of 4



A1-7

Sauget Area 1 Sauget and Cahokia, Illinois

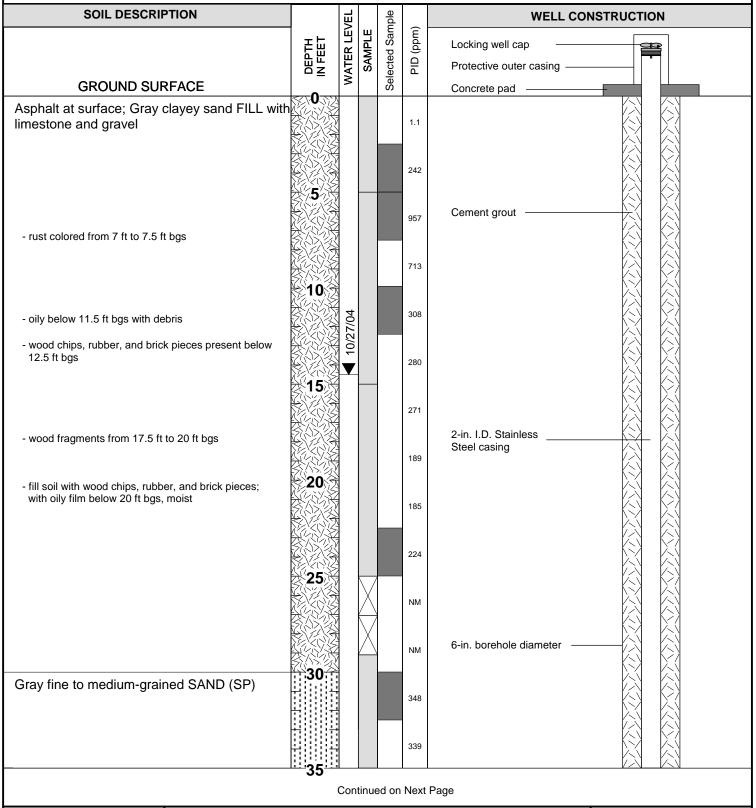
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 35 ft bgs)

COMPLETION DATE: September 23, 2004 GROUND SURFACE ELEV: 409.1 ft, MSL TOP OF CASING ELEV: 411.83 ft, MSL

WELL COORDINATES: N 700713.7 ft E 2295388.7 ft



GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-8

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 23, 2004 GROUND SURFACE ELEV: 409.1 ft, MSL TOP OF CASING ELEV: 411.83 ft, MSL

WELL COORDINATES: N 700713.7 ft E 2295388.7 ft

SOIL DESCRIPTION		린		ple		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page		≊		Sele		Continued from Previous Page
ery dark gray medium-grained SAND (SP)	35				NM	
oily film observed below 40 ft bgs	40				NM	Cement grout
	++ ++				302	
	45				399	
	+				434	
	50				396	2-in. I.D. Stainless Steel casing
	+				379	
	55		X		240	
	+	Į.			NM	
	60				402	
					532	6-in. borehole diameter
- color is lighter shade of gray below 65 ft bgs	65				598	
					285 326	

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-8

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 23, 2004 GROUND SURFACE ELEV: 409.1 ft, MSL TOP OF CASING ELEV: 411.83 ft, MSL

WELL COORDINATES: N 700713.7 ft E 2295388.7 ft

SOIL DESCRIPTION		밀		ple		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page	70	>		Se		Continued from Previous Page
Gray medium-grained SAND (SP)					539	
	75				419	Cement grout
	++++++++++++++++++++++++++++++++++++++				286	
	- 80				121	2-in. I.D. stainless steel casing
- pea gravel present at approximately 83 ft bgs	85				262	
- medium to coarse-grained below 87 ft bgs	1	4	X		NM 122	6-in. borehole diameter
- coarse sand present below 92 ft bgs	90				232	
	+				155	
- coarse sand with gravel below 95 ft bgs	95				198	
	100				181	97.5 ft Bentonite pellet seal
	1				173	101.0 ft
	1				195	Sand backfill, #5 — 104.0 ft

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-8

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 23, 2004 GROUND SURFACE ELEV: 409.1 ft, MSL TOP OF CASING ELEV: 411.83 ft, MSL

WELL COORDINATES: N 700713.7 ft E 2295388.7 ft

COIL DESCRIPTION				Δ.	v v	ELL COORDINATES: N 700713:7 IL E 2293388.7 IL
SOIL DESCRIPTION		WATER LEVEL	 	Selected Sample	(-	WELL CONSTRUCTION
	투끄	R .	SAMPLE	d Sa	PID (ppm)	
	DEPTH IN FEET	ATE	SAN	ecte	PID	
Continued from Previous Page		Š		Sele		Continued from Previous Page
Gray medium to coarse rounded GRAVEL (GW) with coarse-grained sand and occasional cobble fragments	105				61	2-in. I.D. stainless-steel screen, No. 10 slot
	110				67	Sand backfill, #5
Limestone Bedrock	115				118	6-in. borehole diameter
Total Depth = 119.0 ft	120					Bottom plug 119.0 ft
	- 125	-				
	 	- - - -				
	-130- 					
	- -135- - -	-				
	 140	- - -				Notes: 1) Location coordinates are Illinois West Zone State Plane (NAD 83) in feet. Elevations are referenced to NAVD 88. 2) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, this temporary casing was withdrawn during placement of the grout seal.
	06.8	ΔΟ		1111	TD	GSI Job No. G-2876
		70				Page 4 of 4
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A1-8

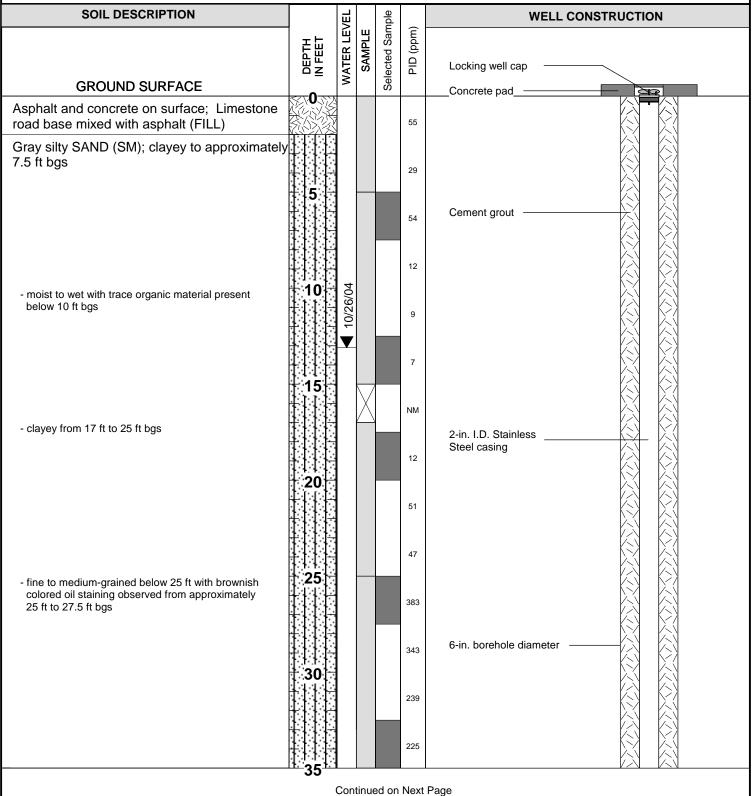
Sauget Area 1 Sauget and Cahokia, Illinois

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 29, 2004 GROUND SURFACE ELEV: 407.7 ft, MSL TOP OF CASING ELEV: 407.36 ft, MSL

WELL COORDINATES: N 700791.6 ft E 2295167.1 ft





LOG & AS-BUILT DIAGRAM

A1-9

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 29, 2004 GROUND SURFACE ELEV: 407.7 ft, MSL TOP OF CASING ELEV: 407.36 ft, MSL

WELL COORDINATES: N 700791.6 ft E 2295167.1 ft

SOIL DESCRIPTION		빌		əldı		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page	<u>:::</u> 35 <u>:::</u>	>		Se		Continued from Previous Page
Gray fine to medium-grained SAND (SP) with occasional fine gravel					44	Cement grout
	40				133	Cement grout
	- AE				165	
	± 45 ± ± ±		X		NM	
	50 -				61	2-in. I.D. Stainless Steel casing
	- - - - 55 -				177	
					88	
- medium to coarse-grained below 60 ft bgs	60				78	
	65				26	6-in. borehole diameter
	+				50 37	

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-9

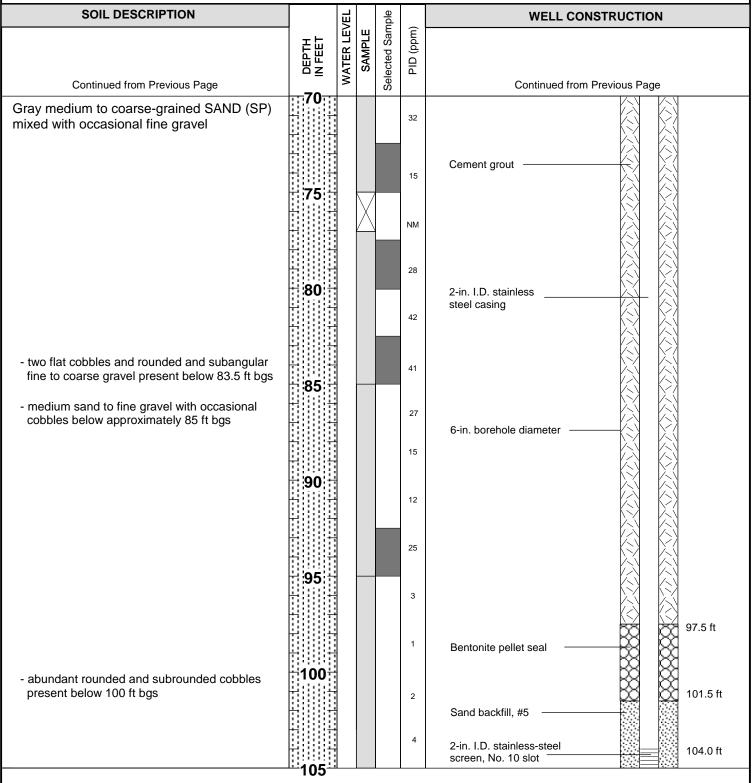
Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 29, 2004 GROUND SURFACE ELEV: 407.7 ft, MSL TOP OF CASING ELEV: 407.36 ft, MSL

WELL COORDINATES: N 700791.6 ft E 2295167.1 ft



Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-9

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 29, 2004 GROUND SURFACE ELEV: 407.7 ft, MSL TOP OF CASING ELEV: 407.36 ft, MSL

WELL COORDINATES: N 700791.6 ft E 2295167.1 ft

SOIL DESCRIPTION Continued from Previous Page	1 02 -	WATER LEVEL	SAMPLE	Selected Sample	(md	WELL CONSTRUCTION
Continued from Previous Page		TER LE	MPLE	Sar	ьш	
Continued from Previous Page		岜	ΣI		Q	
Continued from Previous Page		< T	S	cted	PID (ppm)	
	105 	M		Sele	ъ.	Continued from Previous Page
Coarse GRAVEL (GP) mixed with fine	11034					2-in. I.D. stainless-steel
gravel and flat rounded cobbles					6	screen, No. 10 slot
<u> </u>						
<u>[:</u>					4	
- reddish with sand, weathered clay, and two 5-inch	110					Sand backfill, #5
diameter cobbles from 110 ft to 111 ft bgs	****				NM	
Limestone Bedrock						
E						6-in. borehole diameter
						0-in. boreflole diameter
	115					
E						
[2	+++++					Bottom plug 119.0 ft
Total Depth = 119.0 ft	120					
	425					
	125					
	130					
	• -					
	135					
						Note: Location coordinates are Illinois West Zone State Plane
	140					(NAD 83) in feet. Elevations are referenced to NAVD 88.
LC LC)G & <i>i</i>	AS	-B	UIL	T DI	GSI Job No. G-2876



A1-9

Sauget Area 1 Sauget and Cahokia, Illinois

Page 4 of 4 Issued: 1/21/05

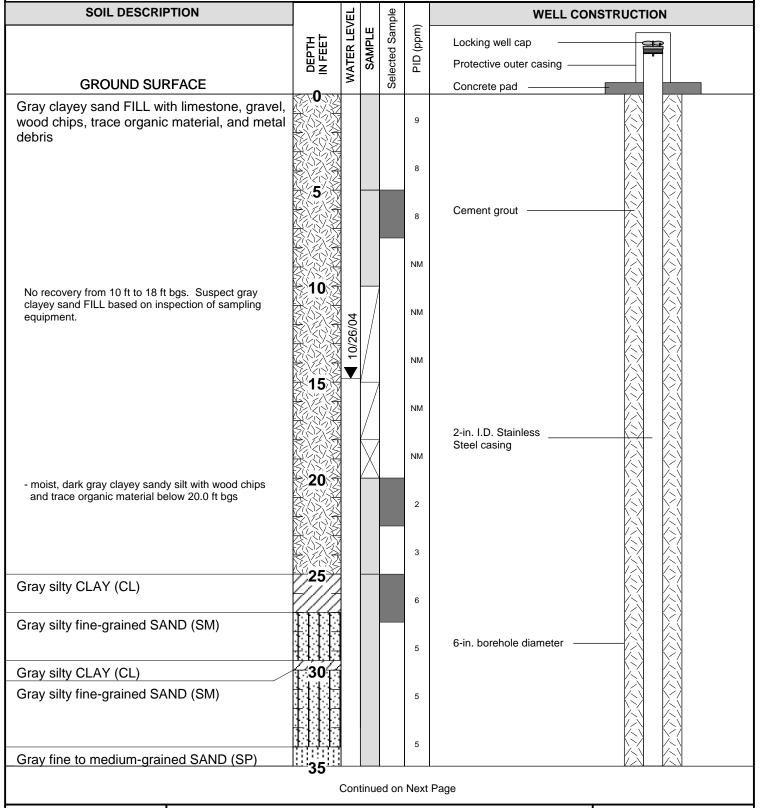
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs)

COMPLETION DATE: September 28, 2004 GROUND SURFACE ELEV: 409.4 ft, MSL TOP OF CASING ELEV: 412.35 ft, MSL

WELL COORDINATES: N 701175.6 ft E 2295675.0 ft





LOG & AS-BUILT DIAGRAM

A1-10

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 28, 2004 GROUND SURFACE ELEV: 409.4 ft, MSL TOP OF CASING ELEV: 412.35 ft, MSL

WELL COORDINATES: N 701175.6 ft E 2295675.0 ft

SOIL DESCRIPTION		핕		ble		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page		%		Sele		Continued from Previous Page
Gray fine to medium-grained SAND (SP) with occasional fine gravel	35				9	
					6	Cement grout
					8	
- small clay nodule observed at approximately 47.5 ft	45 		X		NM	
	± 50 ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±				3	2-in. I.D. Stainless
					5	Steel casing
	 55				3	
					7 9	
- fine gravel present below 60 ft bgs	60				8	
	65				7	6-in. borehole diameter
Gray fine-grained silty SAND (SM)					8	
					8	



LOG & AS-BUILT DIAGRAM

A1-10

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

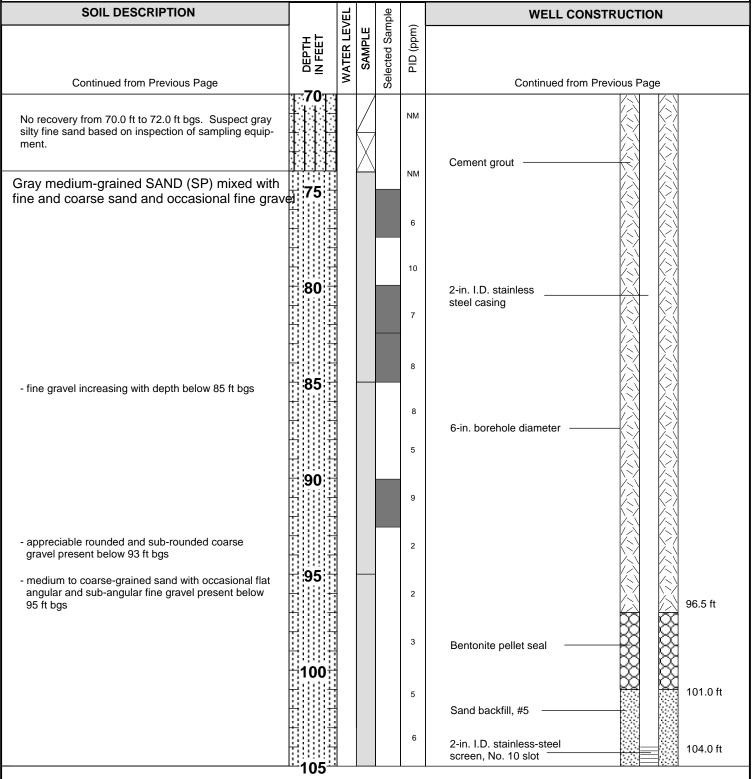
Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 28, 2004 GROUND SURFACE ELEV: 409.4 ft, MSL TOP OF CASING ELEV: 412.35 ft, MSL

WELL COORDINATES: N 701175.6 ft E 2295675.0 ft



Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-10

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 28, 2004 GROUND SURFACE ELEV: 409.4 ft, MSL TOP OF CASING ELEV: 412.35 ft, MSL

WELL COORDINATES: N 701175.6 ft E 2295675.0 ft

		1	1	1	V V	ELE 33010111/11E0: 11 /011/1	E 600KDINATES. N 701173.0 K E 2233073.0 K	
SOIL DESCRIPTION		Æ		Selected Sample		WELL CON	STRUCTION	
	± !:.	Ē	SAMPLE	San	PID (ppm)			
	DEPTH IN FEET	띰	₽	ted	g) Q			
Ocations of the sp. Description Providence	قق	WATER LEVEL	S	elec		Ocations d'assert	Davidson David	
Continued from Previous Page	::105	-		Ŏ		Continued from F	Previous Page	
Gray medium-grained SAND (SP) mixed with		į			7	2-in. I.D. stainless-steel		
fine and coarse sand and occasional fine	411114	1				screen, No. 10 slot		
gravel		1		М				
 coarse rounded gravel and occasional cobbles below 106 ft bgs 					7			
	110	1				Sand backfill, #5		
Fine to coarse GRAVEL (GW)		Ì				Sand Dackilli, #5		
Limestone Bedrock					NM			
		1						
		1				6-in. borehole diameter	<u> </u>	
		3						
	五115	3						
		1						
		1				Bottom plug		
Taral Parath 440 0 ft						Bottom plug —	119.0 ft	
Total Depth = 119.0 ft	-120 -							
	_							
		1						
	⁻ 125							
	_	1						
		\vdash \dashv \mid						
	-							
	-130 -							
	_	-						
	-							
	-							
	-135 -	-						
	<u> </u>	-						
	_	-				Nata		
	<u> </u>	-				Notes: 1) Location coordinates are Illinoi:	s West Zone State Plane	
	<u> </u>	-				(NAD 83) in feet. Elevations ar	e referenced to NAVD 88.	
	-140 -					A temporary 7-inch diameter or during drilling to isolate the was ying alluvial aquifer. After the v casing was withdrawn during p	ste materials from the underl- vell was built, this temporary	
	LOG &	AS	Б-В	UIL	T D	IAGRAM	GSI Job No. G-2876	
		_					Page 4 of 4	
			A	1-1	U		Issued: 1/21/05	

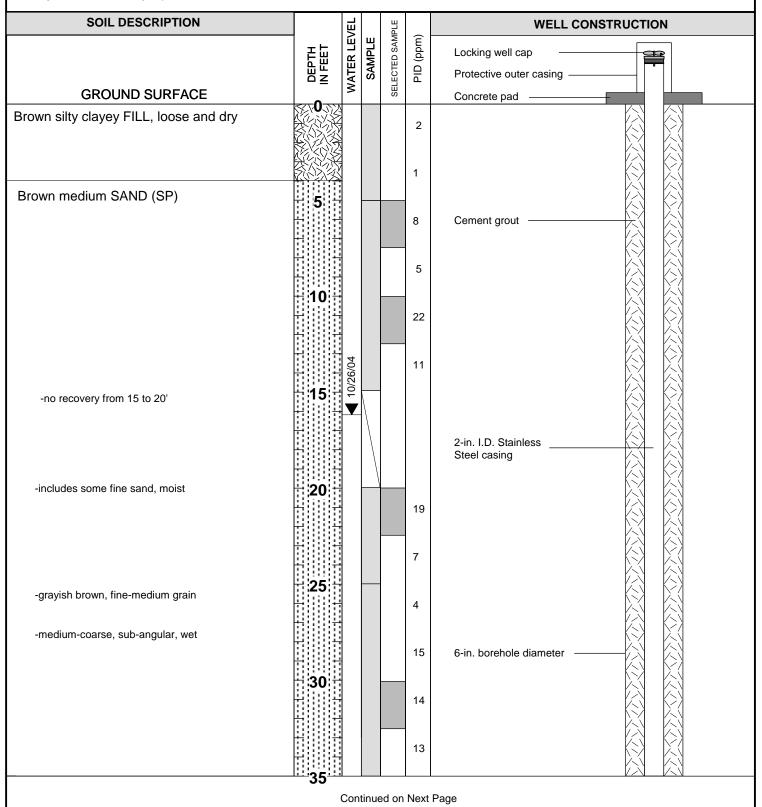


DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 15, 2004 GROUND SURFACE ELEV.: 410.9 ft MSL TOP OF CASING ELEV.: 413.84 ft MSL

COORDINATES: N 701546.5 ft; E 2295896.2 ft





LOG & AS-BUILT DIAGRAM

A1-11

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 15, 2004 GROUND SURFACE ELEV.: 410.9 ft MSL TOP OF CASING ELEV.: 413.84 ft MSL

COORDINATES: N 701546.5 ft; E 2295896.2 ft

SOIL DESCRIPTION		Æ		J.		WELL CONSTRUCTION
	T E LL	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
	DEPTH IN FEET	ATEF	SAM	ECTEL) QIa	
Continued from Previous Page		Š		SELI		Continued from Previous Page
Brown medium-coarse SAND (SP), saturated	35		\times		15	
-sub-rounded to sub-angular grains	+				15	
	40	L			5	Cement grout
					4	
	45					
Brown silty SAND (SM), wet					16	
	50				15	2-in. I.D. Stainless
-no recovery from 55 to 57.5'	55				15	
			A			
	60				16	
Brown fine-medium SAND (SP), saturated, black grains present	+				16	6-in. borehole diameter
	65				17	
-no recovery from 65 to 67.5'						
					11	

GROUNDWATER

SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-11

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 15, 2004
GROUND SURFACE ELEV.: 410.9 ft MSL
TOP OF CASING ELEV.: 413.84 ft MSL

COORDINATES: N 701546.5 ft; E 2295896.2 ft

SOIL DESCRIPTION		Ē		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page	70	_		SE		Continued from Previous Page
rown, medium grained SAND (SP), ub-rounded, saturated	+ + + + +				16	
-occasional cobbles and fine gravel to 80'	± 75 ∷				11	
-grayish brown, fine - medium sand, saturated	- - - 80				6	Cement grout
-no recovery from 85 to 87.5'	85				8	
-medium sand, occasional coarse gravel, saturated	+		\triangle		7	2-in. I.D. stainless steel casing
	<u>+</u> 90				<1 5	
-gray coarse sand, occasional cobbles and fine gravel, wet	95				3	6-in. borehole diameter
	_ 100				1	100.0 ft
	-				1	Bentonite pellet seal 103.5 ft
	HIIII				1	Sand backfill, #5

LOG & AS-BUILT DIAGRAM

A1-11

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05



DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 15, 2004 GROUND SURFACE ELEV.: 410.9 ft MSL TOP OF CASING ELEV.: 413.84 ft MSL

COORDINATES: N 701546.5 ft; E 2295896.2 ft

SOIL DESCRIPTION		!		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	SAMPLE	SELECTED SAMPLE	PID (ppm)	
	DEPTH IN FEET		₹ K	CTEL	٩	
Continued from Previous Page	- -		"	SELE	<u>-</u>	Continued from Previous Page
Gray coarse SAND (SP), saturated	105				<1	6-in. borehole diameter 106 ft
-fine-medium sand from 107 to 109' -coarse sand with cobbles below 109'					<1	
-no recovery from 110 to 116'	110					Sand backfill, #5
			$\setminus $			2-in. I.D. stainless steel
	115					screen, No. 10 slot
imestone bedrock						
	120					Bottom plug121 ft
Total Depth = 121 ft						
	 125					
	120					
	-130- - -					
	-135- 					
						Notes:1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet.2) Elevations are NAVD 88 in feet.
	140					OVA blank reading for this boring was 16ppm
	LOG & AS	 	⊥ Di		T D	IAGRAM GSI Job No. G-2876



LOG & AS-BUILT DIAGRAM A1-11

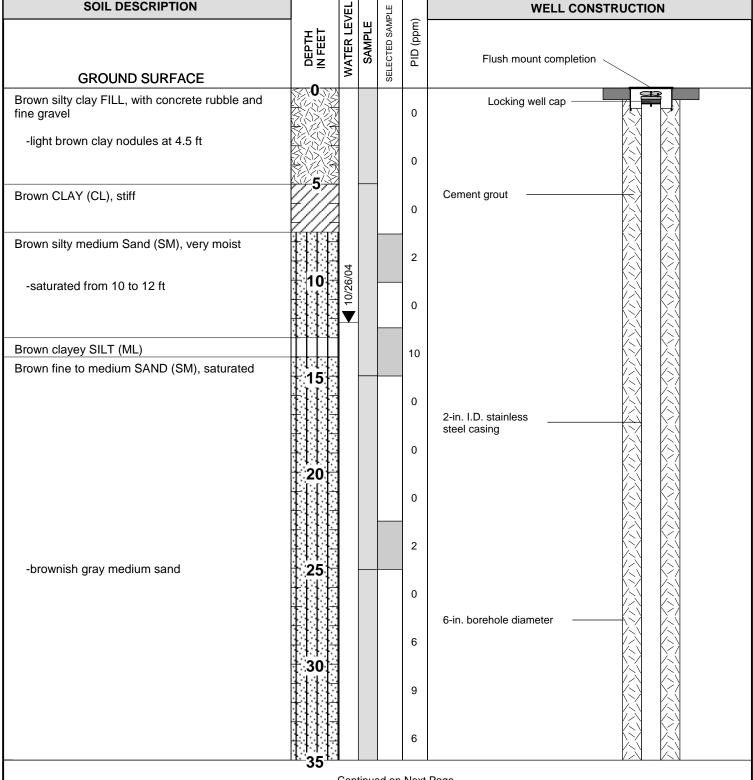
Sauget Area 1 Sauget and Cahokia, Illinois Page 4 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

COMPLETION DATE: October 5, 2004 GROUND SURFACE ELEV.: 406.3 ft MSL TOP OF CASING ELEV .: 406.00 ft MSL

COORDINATES: N 701017.0 ft; E 2294750.3 ft HOLE DIAMETER: 6 inch **SOIL DESCRIPTION WELL CONSTRUCTION**



Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-12

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 5, 2004 GROUND SURFACE ELEV.: 406.3 ft MSL TOP OF CASING ELEV.: 406.00 ft MSL

COORDINATES: N 701017.0 ft; E 2294750.3 ft

SOIL DESCRIPTION		린		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page		≥		SEL		Continued from Previous Page
gray medium to coarse SAND (SP),	35	4	X			
	40				32	Cement grout
	+				116 97	
	∵ 45 ⊤				33	2-in. I.D. Stainless Steel casing
	+				117	
-charcoal and wood pieces from 50 to 51 ft	 				74	6-in. borehole diameter
dark gray from 55 to 57 ft	55				82	
	+				36	
medium to coarse sand from 58 to 60 ft gray, medium to fine sand below 60 ft	60				39	
			-		65	
-no recovery from 65 to 67.5 ft	65				99	
-gray, medium to coarse sand	+	4	X			
					36	

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-12

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 5, 2004 GROUND SURFACE ELEV.: 406.3 ft MSL TOP OF CASING ELEV.: 406.00 ft MSL

COORDINATES: N 701017.0 ft; E 2294750.3 ft

SOIL DESCRIPTION		틸		APLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page		≯		SEI		Continued from Previous Page
Gray medium to coarse SAND (SP), wet	- 70				23	
-coarse gravel and cobbles from 70 to 72 ft with coarse sand, sub-angular						
-occasional cobbles					32	
-grayish brown, fine to medium sand at 75 ft	75				3	
	- 80				7	Cement grout
-coarse sand and fine gravel					36	Schieft grout
	85				4	
-gray coarse sand, sub-angular to sub-rounded	+		<u>X</u>	<u> </u>	0	
-occasional fine gravel	90				0	2-in. I.D. stainless steel casing
	+				0	
	05				0	6-in. borehole diameter
-coarse sand, sub-angular to sub-rounded					0	
					0	98.5 ft
-brownish gray coarse sand, mixed with fine gravel, occasional cobbles to 3 in diameter	100				0	Bentonite pellet seal
	105				24	Sand backfill, #5



LOG & AS-BUILT DIAGRAM

A1-12

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 5, 2004
GROUND SURFACE ELEV.: 406.3 ft MSL
TOP OF CASING ELEV.: 406.00 ft MSL

COORDINATES: N 701017.0 ft; E 2294750.3 ft

Page 4 of 4

Issued: 1/21/05

SOIL DESCRIPTION		VEL		IPLE		WELL CONSTRUCTION			
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)				
Continued from Previous Page		1		SEL		Continued from Previous Page			
Brownish gray coarse SAND (SP), wet, mixed with fine gravel and large cobbles	105				27 15	Sand backfill, #5	05.0 ft		
	110				60	2-in. I.D. stainless steel screen, No. 10 slot			
Gray limestone bedrock	115					6-in. borehole diameter			
	120					Bottom plug12	20.0 ft		
Total Depth = 120.0 ft	 	-							
	- -125- -								
	 	-							
	-130- 								
	- - - -135-								
						Notes:			
	140					Location coordinates are Illinois West Zone State coordinates (NAD 83) in feet. Elevations are NAVD 88 in feet.	e Plane		
	LOG & AS-BUILT DIAGRAM								

A1-12



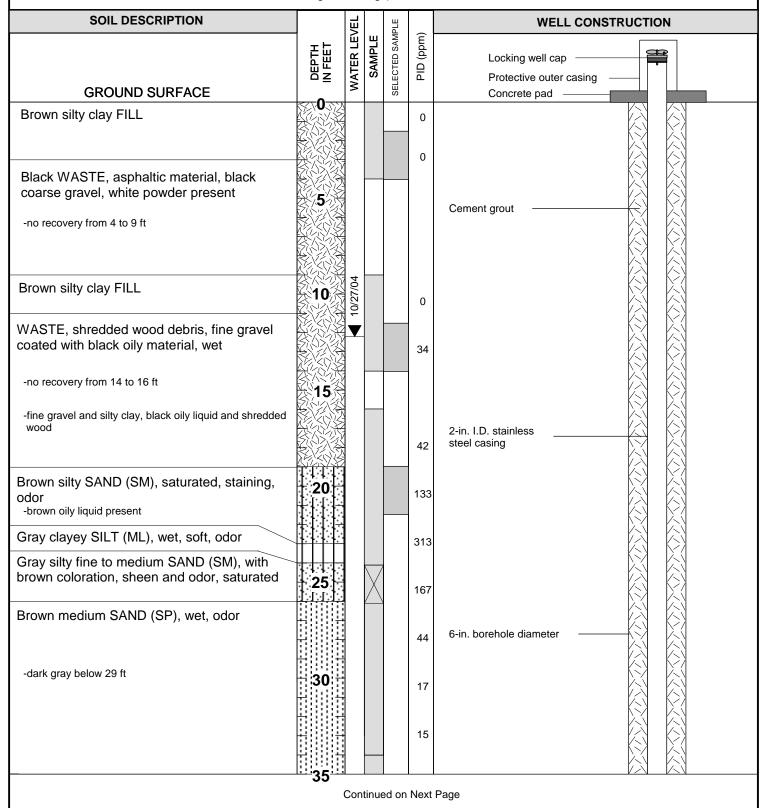
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch with 7 inch over-ride casing to 20 ft bgs)

COMPLETION DATE: October 10, 2004 GROUND SURFACE ELEV. 406.4 ft MSL TOP OF CASING ELEV. 409.38 ft MSL

COORDINATES: N 699960.4 ft; E 2294733.6 ft





LOG & AS-BUILT DIAGRAM

A1-13

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/12/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 9, 2004 GROUND SURFACE ELEV. 406.4 ft MSL TOP OF CASING ELEV. 409.38 ft MSL

COORDINATES: N 699960.4 ft; E 2294733.6 ft

SOIL DESCRIPTION		빌		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page		>		SEL		Continued from Previous Page
gray medium SAND (SP), wet, odor	35				3	
					0	
	40	-			0	Cement grout
	1				0	
	 45	-			0	2-in. I.D. Stainless Steel casing
	+				0	
	50				0	6-in. borehole diameter
ray fine sand					0	
ay coarse sand, occasional coarse gravel id cobbles	55				0	
edium-coarse sand	+				0	
	60				0	
	+-				0	
quent coarse gravel and cobbles	65				0	
	+				0	

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-13

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 9, 2004 GROUND SURFACE ELEV. 406.4 ft MSL TOP OF CASING ELEV. 409.38 ft MSL

COORDINATES: N 699960.4 ft; E 2294733.6 ft

SOIL DESCRIPTION		[필		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page				SE		Continued from Previous Page
Gray medium to coarse SAND (SP), with frequent coarse gravel and cobbles, saturated	70				0	
Gray CLAY (CL)						
-no recovery 72 to 74 ft Gray coarse SAND (SP), rounded to sub-rounded, saturated	⊤ 75				0	
	 				0	
-no recovery 79 to 84 ft due to rock in barrel	80					Cement grout
-no recovery 84 to 99 ft due to flowing sands	± 85		X			2-in. I.D. stainless steel casing
	90					6-in. borehole diameter
	95					Bentonite pellet seal 94.0 ft 97.5 ft
-coarse sand, mixed with fine gravel and gray bedrock fines	100				0	Sand backfill, #5



LOG & AS-BUILT DIAGRAM

A1-13

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 9, 2004 GROUND SURFACE ELEV. 406.4 ft MSL TOP OF CASING ELEV. 409.38 ft MSL

COORDINATES: N 699960.4 ft ; E 2294733.6 ft

Page 4 of 4

Issued: 1/21/05

SOIL DESCRIPTION		Æ		PLE		WELL COM	ISTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)		
Continued from Provious Page		WATE	δ	ELECT	PID	Continued from	Draviaus Dage
Continued from Previous Page	::105:	_		S		Continued from	Previous Page
Gray coarse SAND (SP), saturated					0	Sand backfill, #5	
-brown, mixed with fine gravel and occasional cobbles	#				0		
-gray fines from pulverized bedrock noted in core	 110-					2-in. I.D. stainless steel screen, No. 10 slot	
Gray limestone bedrock, competent					0	35/35/1, 143. 13 5/5/	
						6-in. borehole diameter ——	
	115					Bottom plug	115.5 ft
Total Depth = 115.5 ft	<u> </u>						
	<u> </u>						
	120						
	120						
	<u> </u>						
	125						
	<u> </u>						
	130-						
	<u> </u>						
	135					Notes:	
- - - - -14						Notes: 1) Location coordinates are Illin coordinates (NAD 83) in fee 2) Elevations are NAVD 88 in fe 3) A temporary 7-inch diameter installed during drilling to isol the underlying alluvial aquife temporary casing was withdr grout seal.	t. eet. over-ride casing was late the waste materials from r. After the well was built, this
	LOG &	AS	-B	UIL	T D	IAGRAM	GSI Job No. G-2876

A1-13



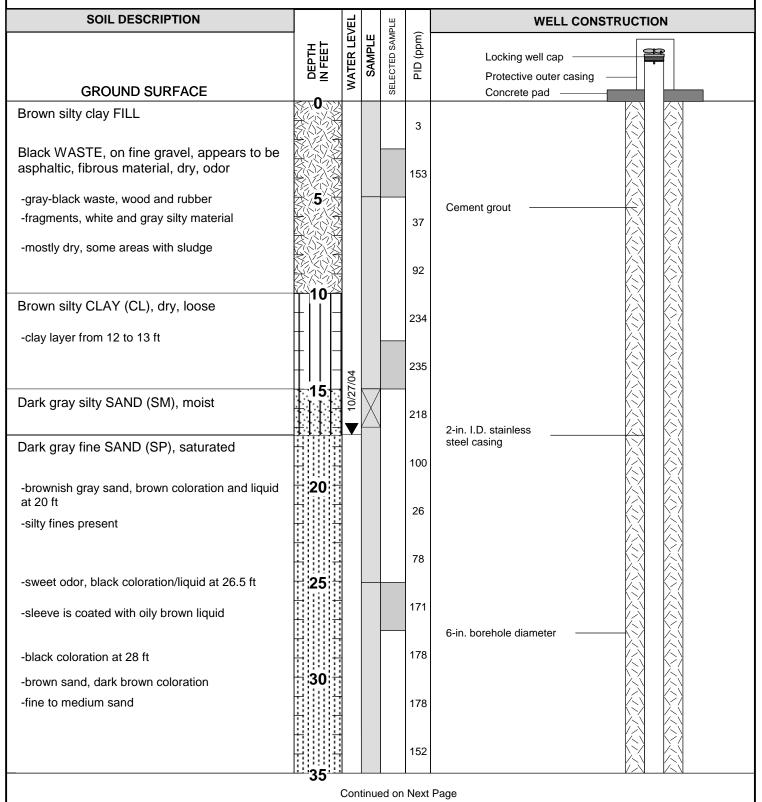
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7-inch over-ride casing to 20 ft bgs)

GROUND SURFACE ELEV.: 411.6 ft MSL
TOP OF CASING ELEV.: 414.80 ft MSL

COORDINATES: N 700042.0 ft; E 2294913.7 ft





LOG & AS-BUILT DIAGRAM

A1-14

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 11, 2004 GROUND SURFACE ELEV.: 411.6 ft MSL TOP OF CASING ELEV.: 414.80 ft MSL

COORDINATES: N 700042.0 ft; E 2294913.7 ft

product layer se sand, dark brown free product 40. 40. 226 177 2-in. I.D. Stainless Steel casing 105 40 50 6-in. borehole diameter 41 77 medium sand, no evidence of free product w 55 ft sisional cobbles gray medium to coarse sand gray medium to coarse sand 60: 51 52 53 54 55 56 51 51	SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION
ish gray fine SAND (SP), wet product layer se sand, dark brown free product layer se sand, black from free product staining 45 to stain at 52 ft sistent at 52			E	PLE	SAM	(mdc	
ish gray fine SAND (SP), wet product layer se sand, dark brown free product layer se sand, black from free product staining 45 to stain at 52 ft sistent at 52			TER	SAM	СТЕС	J) (I	
ish gray fine SAND (SP), wet product layer se sand, dark brown free product d, black from free product fium sand, black liquid staining 45 50 64 77 medium sand, no evidence of free product w 55 ft sisonal cobbles gray medium to coarse sand for some sand gray medium to coarse sand for some sand	Continued from Previous Page		W	٥,	SELE	Δ.	Continued from Previous Page
product layer se sand, dark brown free product d, black from free product d, black from free product 45 45 46 47 48 49 45 40 45 40 45 40 40 50 6-in. borehole diameter 48 49 40 6-in. borehole diameter 64 77 78 79 79 70 70 70 71 71 72 71 72 71 72 72 71 72 73 74 75 76 77 78 78 78 78 79 79 70 70 70 71 88 85 87 87 87 88 87 87 88 87 88 87 88 87 88 88 88 89 99 9	wnish gray fine SAND (SP), wet	35				404	
At stain at 52 ft medium sand, no evidence of free product signay medium to coarse sand for an indeed on soil core At stain at 52 ft Cement grout 226 227 227 227 107 226 227 107 227 107 226 227 107 226 227 107 226 227 107 226 227 108 226 227 109 40 6-in. borehole diameter 64 77 18 18 18 18 18 18 18 18 18	e product layer					124	
ium sand, black liquid staining 45 40 50 64 77 medium sand, no evidence of free product w 55 ft sistonal cobbles gray medium to coarse sand gray medium to coarse sand an noted on soil core 226 177 2-in. I.D. Stainless Steel casing 40 6-in. borehole diameter 55 18 51 51 51 51 51 51 51 51	arse sand, dark brown free product layer					128	
ium sand, black liquid staining 45 40 50 6-in. borehole diameter 77 medium sand, no evidence of free product w 55 ft sional cobbles gray medium to coarse sand 51 62 65 65 65 77 18 78 78 79 70 70 70 71 71 72 73 74 75 76 77 78 78 78 78 78 78 78 78	d, black from free product	40				226	Cement grout
ium sand, black liquid staining 45 40 50 6-in. borehole diameter 77 medium sand, no evidence of free product w 55 ft sional cobbles gray medium to coarse sand an noted on soil core 65 18		+				177	
s stain at 52 ft 40 6-in. borehole diameter 77 78 85 gray medium to coarse sand 60 61 62 63 65 65 65 66 66 66 67 67 67 68 68 68 68 68 68 68 68 68 68 68 68 68	edium sand, black liquid staining	45					2-in. I.D. Stainless Steel casing
s stain at 52 ft 6-in. borehole diameter 77 78 78 79 79 79 79 79 79 79						105	
k stain at 52 ft medium sand, no evidence of free product w 55 ft sional cobbles gray medium to coarse sand gray medium to coarse sand 51 gray medium to coarse sand 51 48 51 51 51 65 The noted on soil core						40	6-in horehole diameter
medium sand, no evidence of free product w 55 ft 18 Issional cobbles gray medium to coarse sand gray medium to coarse sand 5 In noted on soil core 77 18 18 18 18 19 19 10 10 10 10 10 10 10 10		50				64	o in soletion diameter
w 55 ft sisional cobbles gray medium to coarse sand for an noted on soil core 18 85 51 65 14	ck stain at 52 ft	+				77	
gray medium to coarse sand gray medium to coarse sand 5 en noted on soil core 85 14	y, medium sand, no evidence of free product ow 55 ft	55				18	
gray medium to coarse sand gray medium to coarse sand 51 65 en noted on soil core	asional cobbles					85	
gray medium to coarse sand 5 en noted on soil core	k gray medium to coarse sand	60					
en noted on soil core	t gray medium to coarse sand	+					
	en noted on soil core	65		\/			
	een and brown layer noted on soil core	+		\bigwedge		14	

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-14

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 11, 2004 GROUND SURFACE ELEV.: 411.6 ft MSL TOP OF CASING ELEV.: 414.80 ft MSL

COORDINATES: N 700042.0 ft; E 2294913.7 ft

SOIL DESCRIPTION		밀		IPLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	
Continued from Previous Page	70	_		S		Continued from Previous Page
Gray coarse SAND (SP), rounded to sub-rounded with fine gravel, wet	+ + + + + + + + + + + + + + + + + + + +				42	
-no recovery 75 to 85 ft	- - 75		. /		44	
	80					Cement grout
-gray coarse sand with fine gravel, frequent cobbles, layer of brown liquid present on pooled water in core	- 85 				32	
-medium sand with occasional cobbles, layer of brown liquid noted on pooled water in core	90				0	2-in. I.D. stainless steel casing
-black staining and pooling free product						
-occasional cobbles are black and coated with oily liquid, gloves and sampling tools are stained brown - black	95		\		36	6-in. borehole diameter
-no recovery 95 to 97.5 ft	HIIII		\			
-gray coarse sand, brown free product, strong odor	+				27	99.0 ft
-dark gray medium to coarse sand	100				47	Bentonite pellet seal
	+				11	Sand backfill, #5

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-14

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch

COMPLETION DATE: October 11, 2004 GROUND SURFACE ELEV.: 411.6 ft MSL TOP OF CASING ELEV.: 414.80 ft MSL

COORDINATES: N 700042.0 ft; E 2294913.7 ft

SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION
	゠	WATER LEVEL	SAMPLE	SELECTED SAMPLE	(mdd)	
	DEPTH IN FEET	\TEF	SAM	CTEL	PID (F	
Continued from Previous Page		×		SELE		Continued from Previous Page
Light gray medium to coarse SAND (SP), evidence of free product	105				37	Sand backfill, #5
-no evidence of free product 107.5 to 110 ft	+				34	107.5 ft
-minor staining, frequent coarse gravel, small cobbles -black coarse sand and fine gravel 112 to 113.5 ft	110				26	2-in. I.D. stainless steel screen, No. 10 slot
-gray fine sand 113.5 to 115 ft					29	
Gray clay, cobbles and coarse gravel, mixed with powder from pulverized bedrock	115+ - -				66	6-in. borehole diameter
imestone bedrock						
	120					
						Bottom plug 122.5 ft
Total Depth = 122.5 ft	<u> </u>					
	125					
	<u> </u>					
	- -120-					
	130					
	-					
	-12E-					
	-135 - - - - - -140					Notes: 1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. 2) Elevations are NAVD 88 in feet. 3) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials fro the underlying alluvial aquifer. After the well was built, the temporary casing was withdrawn during placement of the grout seal.
	LOG &	∟ ΔS	L R	 	T D	IAGRAM GSI Job No. G-2876



LOG & AS-BUILT DIAGRAM

A1-14

Sauget Area 1 Sauget and Cahokia, Illinois Page 4 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

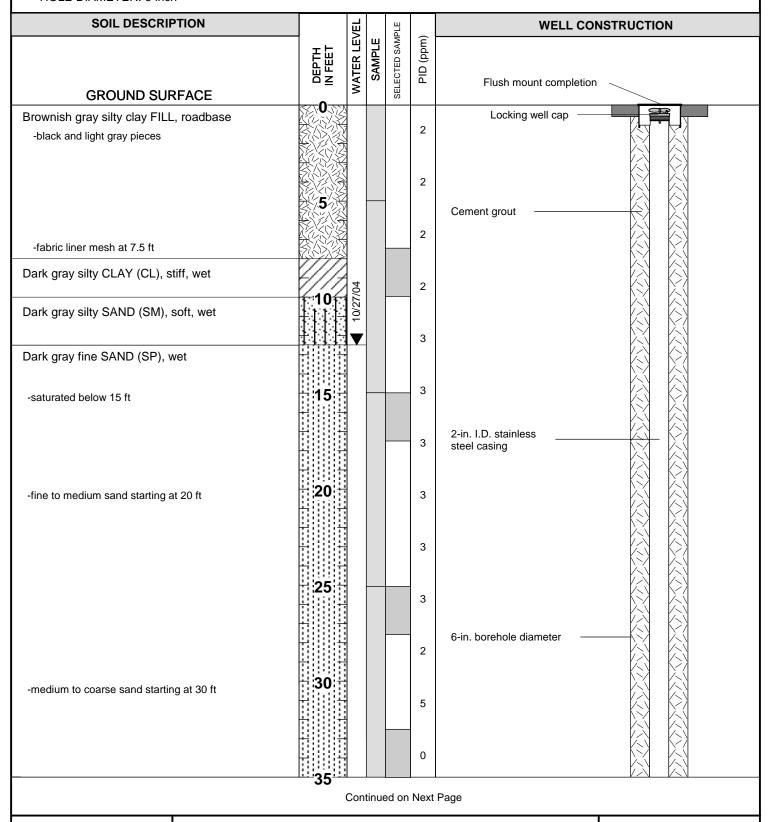
DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 13, 2004

TOP OF CASING ELEV. 406.77 ft MSL

GROUND SURFACE ELEV. 407.1 ft MSL

COORDINATES: N 700265.9 ft; E 2294901.7 ft



LOG & AS-BUILT DIAGRAM

A1-15

Sauget Area 1

Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 1 of 4



DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 13, 2004 GROUND SURFACE ELEV. 407.1 ft MSL TOP OF CASING ELEV. 406.77 ft MSL

COORDINATES: N 700265.9 ft; E 2294901.7 ft

SOIL DESCRIPTION		빌		SLE.		WELL CONSTRUCTION
	│ _≠ ╓	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
	DEPTH IN FEET	띰	AMI	CTED	a) O	
Continued from Previous Page	□Z	WA.	S	ELEC	Ы	Continued from Previous Page
	35:::			S		Continued from Previous Page
ray medium SAND (SP), saturated					5	
	+::::					
	41111					
- medium to coarse from 37 to 40 ft					4	
	40					
-medium sand below 40 ft, wet					4	Cement grout
	Hilli					
	$+\cdots+$					
					1	
	⊹ 45 ÷					2-in. I.D. Stainless Steel casing
					5	
	#1111					
	Hilli					
	 				4	
	50					6-in. borehole diameter
					6	
	+11114					
- wood pieces						
	H_{ij}					
	55					
and the same of the Control of the same of					1	
medium sand with fine gravel and occasional coarse gravel	+				•	
	+					
					1	
-medium to coarse sand with occasional fine	60					
gravel, wet	+				1	
					•	
-no recovery 62.5 to 67.5 ft	Hilli					
	+					
	65 t					
	HIIII		X			
	H					
-dark gray medium to coarse sand, wet						
					0	

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-15

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch

COMPLETION DATE: October 13, 2004 GROUND SURFACE ELEV. 407.1 ft MSL TOP OF CASING ELEV. 406.77 ft MSL

COORDINATES: N 700265.9 ft; E 2294901.7 ft

SOIL DESCRIPTION		Æ		1PLE		WELL CONSTRUCTION
Continued from Previous Page	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)	Continued from Previous Page
	:::70					
Gray medium to coarse SAND (SP), saturated -no recovery 72.5 to 75 ft	1				0	
- gravel and occasional cobbles at 75 ft	- 75 -				0	
-no recovery 80 to 85 ft	 80				6	Cement grout
-brown medium sand, saturated	 		\ <u>\</u>		1	
	_ 90 				1	2-in. I.D. stainless steel casing
-no recovery 92.5 to 100 ft	95					6-in. borehole diameter
	1					Bentonite pellet seal
-brown medium to coarse sand with fine gravel, wet	100				1	Sand backfill, #5
	105				3	2-in. I.D. stainless steel screen, No. 10 slot

GROUNDWATER SERVICES, INC. **LOG & AS-BUILT DIAGRAM**

A1-15

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 3 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 13, 2004 GROUND SURFACE ELEV. 407.1 ft MSL TOP OF CASING ELEV. 406.77 ft MSL

COORDINATES: N 700265.9 ft; E 2294901.7 ft

SOIL DESCRIPTION		Æ		PLE		WELL CONSTRUCTION
	푸늡	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
	DEPTH IN FEET	TER	SAM	СТЕР) QI	
Continued from Previous Page		×	0,	SELE	Δ.	Continued from Previous Page
Brown medium to coarse SAND (SP),	105					
rith occasional cobbles, moist					3	Conditional #5
-gray fine sand						Sand backfill, #5
-brown silty sand with gravel and small cobbles					1	
-slippery moist sheen noted on gloves worn by field	110				'	2-in. I.D. stainless steel
staff	1111111				1	screen, No. 10 slot
ray limestone bedrock						
						6-in. borehole diameter
						6-III. borenole diameter
	月115士					
						Bottom plug 117.5 ft
Total Danth 117.5 ft	-120 -					
Total Depth = 117.5 ft						
	<u> </u>					
	<u> </u>					
	<u> </u>					
	⁻ 125					
	130-					
	130					
	<u> </u>					
	<u> </u>					
	-135 -	1				
	<u> </u>	1				
		1				
		1				Notes:
	140					Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet.
	140					2) Elevations are NAVD 88 in feet.
- ,						1
	I OG &	AS	-R	uii '	T D	IAGRAM GSI Job No. G-2876



LOG & AS-BUILT DIAGRAM

A1-15

Sauget Area 1 Sauget and Cahokia, Illinois Page 4 of 4

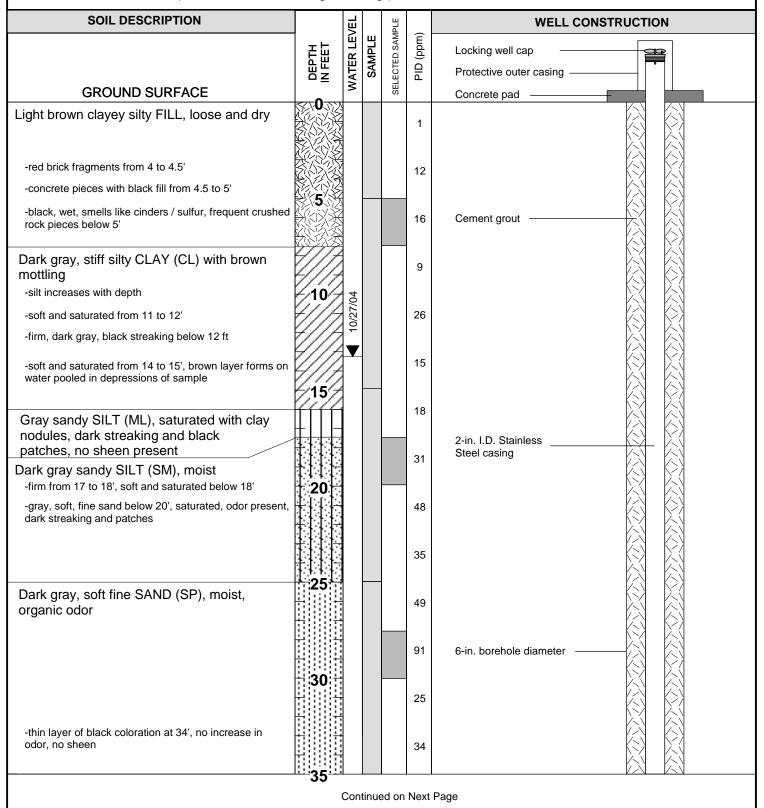
DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 25 ft bgs)

COMPLETION DATE: September 13, 2004
GROUND SURFACE ELEV.: 407.3 ft MSL
TOP OF CASING ELEV.: 410.24 ft MSL

COORDINATES: N 700110.7 ft; E 2294584.7 ft





LOG & AS-BUILT DIAGRAM

A1-16

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch

COMPLETION DATE: September 13, 2004 GROUND SURFACE ELEV.: 407.3 ft MSL TOP OF CASING ELEV.: 410.24 ft MSL

COORDINATES: N 700110.7 ft; E 2294584.7 ft

SOIL DESCRIPTION		百		PLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page	:::35:::	>		SEI		Continued from Previous Page
Gray - dark gray, fine-medium SAND (SP), moist -sub-angular to sub-rounded grains	33				50	
-occasional cobbles and coarse gravel					49	
-medium grain sand with black coloration and slight odor starting at 40 ft	40				25	Cement grout
	45				98	
	7		X		4	
	50				4	
					17	2-in. I.D. Stainless Steel casing
	÷ 55				7	
			X		11	
-dark gray, medium - fine grain sand, rounded to	60				11	
sub-rounded, wet					8	6-in. borehole diameter
-naturally occurring wood pieces, white and brown, at 64'	+				80	
-dark gray, coarse sand, sub-rounded to sub-angular	65				4	
-saturated below 68'	+					
					3	



LOG & AS-BUILT DIAGRAM

A1-16

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 2 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 13, 2004 GROUND SURFACE ELEV.: 407.3 ft MSL TOP OF CASING ELEV.: 410.24 ft MSL

COORDINATES: N 700110.7 ft; E 2294584.7 ft

SOIL DESCRIPTION		Ē		J.	_	WELL CONSTRUCTION	NC
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	OVA (ppm)		
Continued from Previous Page	70	>		SE		Continued from Previous Pa	ge
Dark gray coarse SAND (SP), moist	70				3		
-fine gravel, occasional clay nodules and abundant cobbles from 73 to 75'	+				4		
-occasional fine gravel, rounded to sub-rounded, occasional cobbles	† 75				14		
	+				14		
medium grained sand below 83'	= 80				10	Cement grout	
					13	2-in. I.D. stainless steel casing	
-gray medium to coarse sand, occasional cobbles and fine gravel, moist	- 85 -		X		17		
	90				17	6-in. borehole diameter	
					17		
	95				15		
					18		
					8		
-medium to coarse sand, saturated	100				17		101.0 ft
-occasional cobbles and fine gravel from 103 to 105'	<u> </u>				16	Bentonite pellet seal	402.5.4
	HIIII				10	Sand backfill, #5	103.5 ft

Continued on Next Page



LOG & AS-BUILT DIAGRAM

A1-16

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 13, 2004 GROUND SURFACE ELEV.: 407.3 ft MSL TOP OF CASING ELEV.: 410.24 ft MSL

COORDINATES: N 700110.7 ft; E 2294584.7 ft

SOIL DESCRIPTION		ÆL		IPLE		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	SELECTED SAMPLE	PID (ppm)	
Continued from Previous Page		3		SEI		Continued from Previous Page
Gray medium - coarse SAND (SP), saturated -coarse sand, mixed with coarse gravel, frequent cobbles below 107 ft	105				23	6-in. borehole diameter ———————————————————————————————————
-slightly elevated chemical odor at 112 ft	110				19	Sand backfill, #5
Limestone bedrock	115					2-in. I.D. stainless steel screen, No. 10 slot
Total Depth = 121 ft	120					Bottom plug 121 ft
	-125 					
	135 					Notes: 1) Location coordinates are Illinois West Zone State Plane coordinates (NAD 83) in feet. 2) Elevations are NAVD 88 in feet. 3) A temporary 7-inch diameter over-ride casing was installed during drilling to isolate the waste materials from the underlying alluvial aquifer. After the well was built, this temporary casing was withdrawn during placement of the grout seal.



LOG & AS-BUILT DIAGRAM A1-16

Sauget Area 1 Sauget and Cahokia, Illinois

GSI Job No. G-2876

Page 4 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

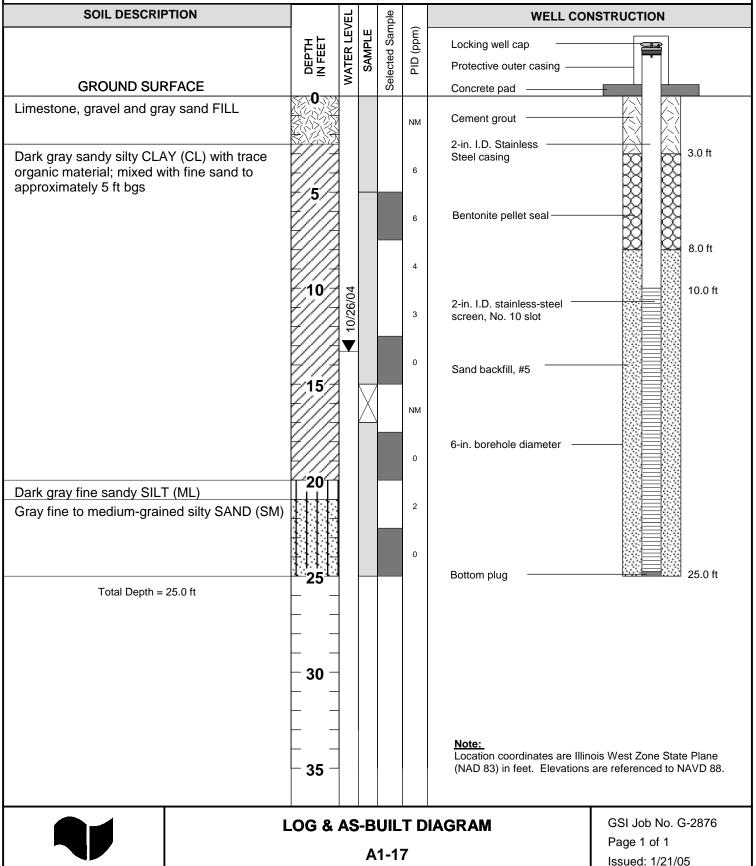
DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

GROUNDWATER

SERVICES, INC.

COMPLETION DATE: September 30, 2004 GROUND SURFACE ELEV: 407.2 ft, MSL TOP OF CASING ELEV: 410.33 ft, MSL

WELL COORDINATES: N 700246.3 ft E 2294513.0 ft



Sauget Area 1

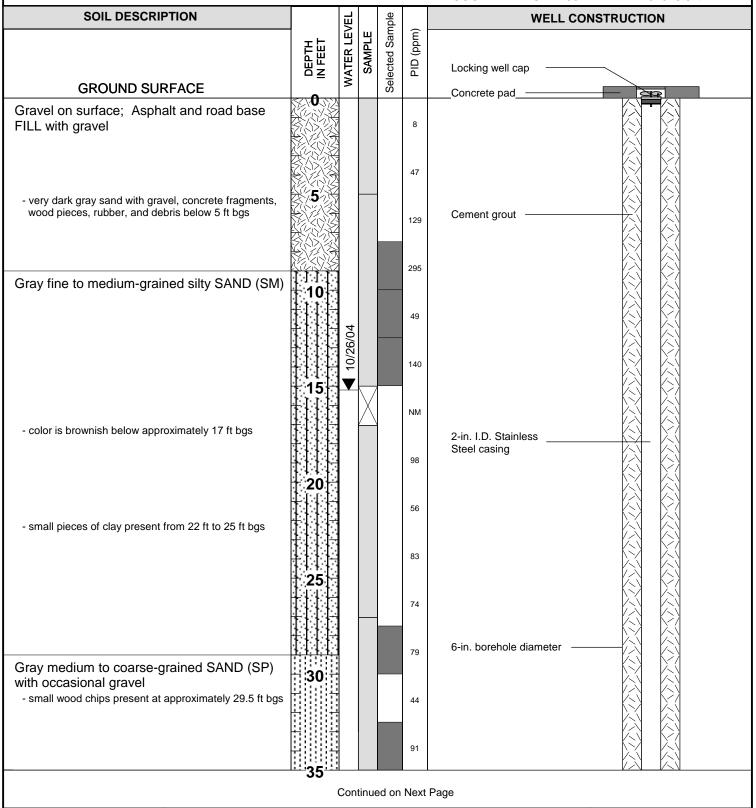
Sauget and Cahokia, Illinois

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 24, 2004 GROUND SURFACE ELEV: 409.6 ft, MSL TOP OF CASING ELEV: 409.21 ft, MSL

WELL COORDINATES: N 700142.7 ft E 2294318.5 ft





LOG & AS-BUILT DIAGRAM

A1-18

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

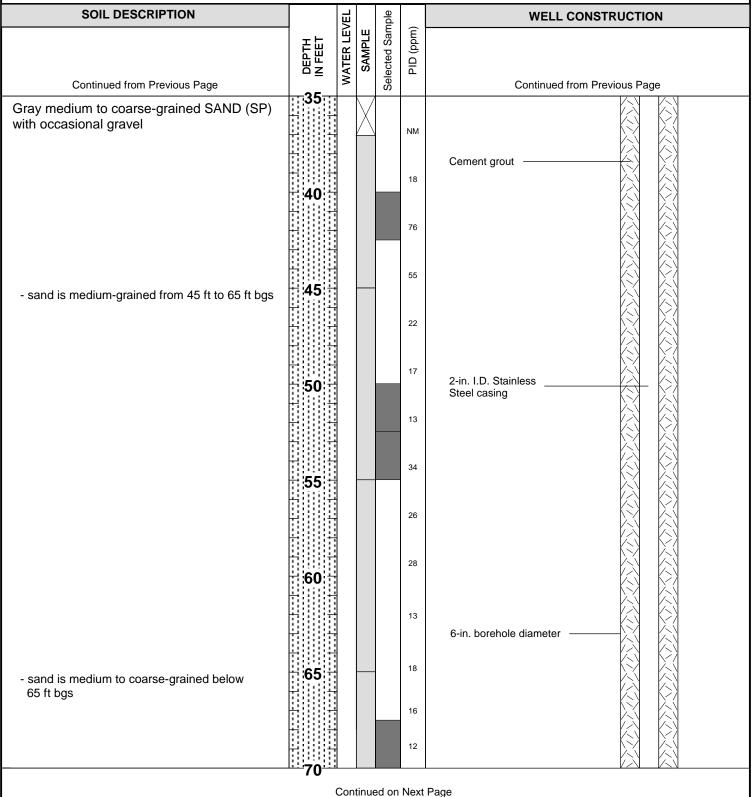
Page 1 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 24, 2004 GROUND SURFACE ELEV: 409.6 ft, MSL TOP OF CASING ELEV: 409.21 ft, MSL

WELL COORDINATES: N 700142.7 ft E 2294318.5 ft



LOG & AS-BUILT DIAGRAM GROUNDWATER

SERVICES, INC.

Sauget Area 1 Sauget and Cahokia, Illinois

A1-18

GSI Job No. G-2876

Page 2 of 4 Issued: 1/21/05

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 24, 2004 GROUND SURFACE ELEV: 409.6 ft, MSL TOP OF CASING ELEV: 409.21 ft, MSL

WELL COORDINATES: N 700142.7 ft E 2294318.5 ft

SOIL DESCRIPTION		필		e du		WELL CONSTRUCTION
	DEPTH IN FEET	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
Continued from Previous Page	7 0	8		Sel		Continued from Previous Page
Gray medium to coarse-grained SAND (SP)	70				13	
- appreciable rounded to subrounded coarse gravel present below 73 ft bgs	- - 75 - -		X		20	Cement grout
		4			NM 10	
	- 80 - - -				13	2-in. I.D. stainless steel casing
- occasional cobbles below 85 ft bgs	- - - - -				15	
	- 90 -				13	6-in. borehole diameter
) 				10	
	95				13	
subrounded fine GRAVEL (GP) and medium- rained sand with appreciable cobbles, coarse ravel and coarse sand					7	
	100				8	100.0 ft
					12	Bentonite pellet seal
					8	Sand backfill, #5

GROUNDWATER SERVICES, INC.

LOG & AS-BUILT DIAGRAM

A1-18

Sauget Area 1 Sauget and Cahokia, Illinois GSI Job No. G-2876

Page 3 of 4

DRILLER: Gerald Sealey (Prosonic Corporation)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: September 24, 2004 GROUND SURFACE ELEV: 409.6 ft, MSL TOP OF CASING ELEV: 409.21 ft, MSL

WELL COORDINATES: N 700142.7 ft E 2294318.5 ft

OOU DECORPTION				۵.	VVI	ELL COORDINATES: N 700142.7 ft E 2294318.5 ft
SOIL DESCRIPTION		:VEL		mple	<u></u>	WELL CONSTRUCTION
	Ŧ.H.	WATER LEVEL	SAMPLE	Selected Sample	PID (ppm)	
	DEPTH IN FEET	'ATE	SAN	ecte	PID	
Continued from Previous Page	105 . ·	Α.		Sel		Continued from Previous Page
Subrounded fine GRAVEL (GP) and medium-	'				6	106.0 ft
grained sand with appreciable cobbles, coarse gravel and coarse sand	4					2-in. I.D. stainless-steel
giaver and obtained saint	+					screen, No. 10 slot
					13	Sand backfill, #5
	110					
					13	
					13	
Limestone Bedrock						6-in. borehole diameter
	7115				NM	
	三120字					Bottom plug — 121.0 ft
Total Depth = 121.0 ft						Bottom plug 121.0 ft
	_125 <u></u>					
	_					
	130 <u></u>					
	⁻ 135 ⁻					
	<u> </u>					
	 					
	– –					Note:
						Location coordinates are Illinois West Zone State Plane (NAD 83) in feet. Elevations are referenced to NAVD 88.
	OG &	 AS	-B	UIL	T D	IAGRAM GSI Job No. G-2876



LOG & AS-BUILT DIAGRAM

A1-18

Sauget Area 1 Sauget and Cahokia, Illinois Page 4 of 4

DRILLER: Mark Kuchinski (Boart Longyear)

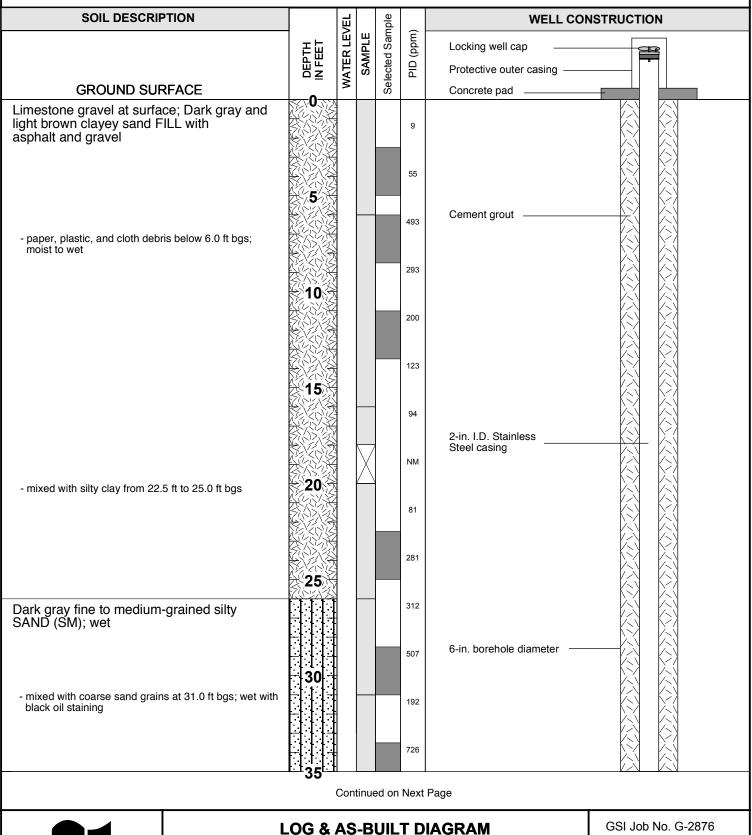
DRILLING METHOD: Rotosonic

HOLE DIAMETER: 6 inch (with 7 inch over-ride casing to 32 ft bgs)

COMPLETION DATE: October 12, 2005
GROUND SURFACE ELEV: Not surveyed
TOP OF CASING ELEV: Not surveyed
WELL COORDINATES: Not surveyed

Page 1 of 4

Issued: 1/6/06



A1-19

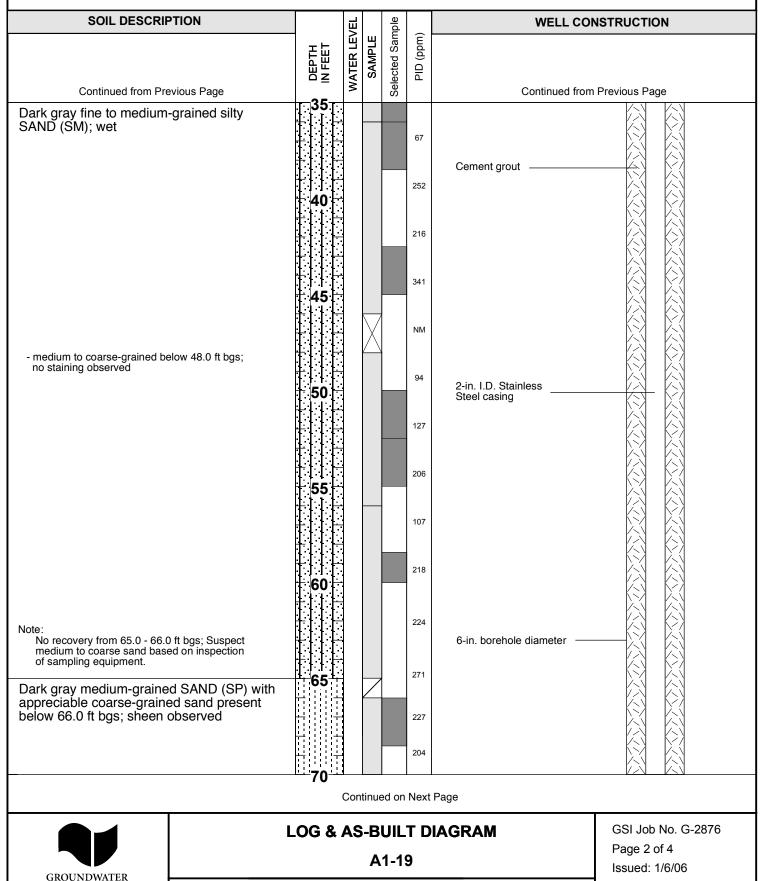


DRILLER: Mark Kuchinski (Boart Longyear)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

SERVICES, INC.

COMPLETION DATE: October 12, 2005 GROUND SURFACE ELEV: Not surveyed TOP OF CASING ELEV: Not surveyed WELL COORDINATES: Not surveyed



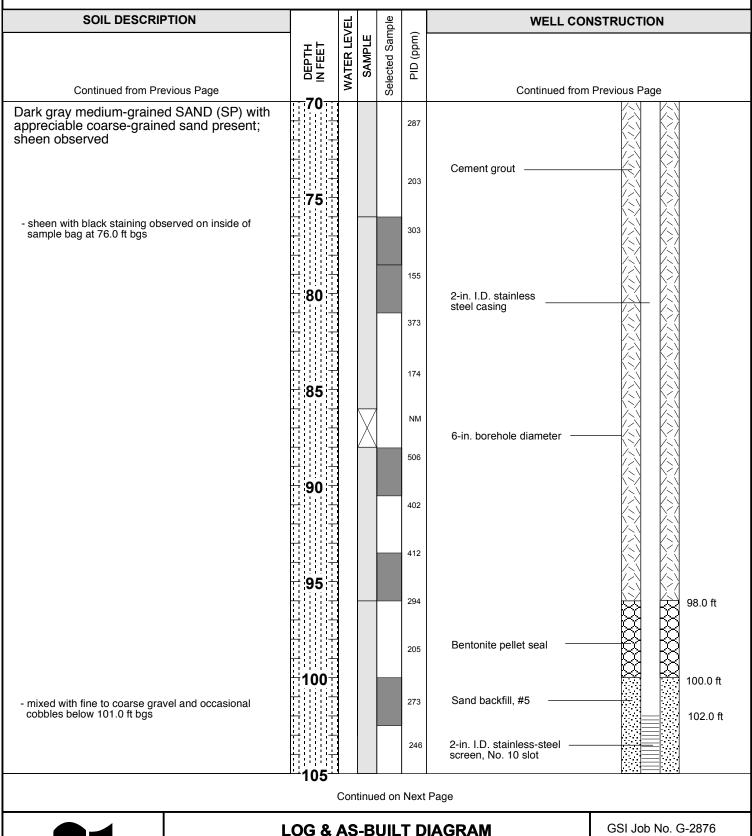
DRILLER: Mark Kuchinski (Boart Longyear)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

COMPLETION DATE: October 12, 2005 GROUND SURFACE ELEV: Not surveyed TOP OF CASING ELEV: Not surveyed WELL COORDINATES: Not surveyed

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Issued: 1/6/06



A1-19



DRILLER: Mark Kuchinski (Boart Longyear)

DRILLING METHOD: Rotosonic HOLE DIAMETER: 6 inch

SERVICES, INC.

COMPLETION DATE: October 12, 2005 GROUND SURFACE ELEV: Not surveyed TOP OF CASING ELEV: Not surveyed WELL COORDINATES: Not surveyed

